

#6



SEQUENCE LISTING

<110> Burgess, Catherine E.

<120> Novel Proteins and Nucleic Acids Encoding Same

<130> 15966-621

<140> USSN 09/746,491

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<151> 1999-12-21

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<170> PatentIn Ver. 2.0

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ttg ctg ggg aaa gca ctc cag gtg ggt gtt act aca aat cac cgt ctg 96  
Leu Leu Gly Lys Ala Leu Gln Val Gly Val Thr Thr Asn His Arg Leu  
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ctg acc cac tgg tac tac ctg aca gcc ttt gat att tcc aga gtc aat 144  
Leu Thr His Trp Tyr Tyr Leu Thr Ala Phe Asp Ile Ser Arg Val Asn  
35 40 45

acc tgc ttt cca ttc tcc aca gca tct aat ata agt cat ggc ttc tca 192  
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tct gtc ctg ctt ccc cgc ttc gcg ttc acc act gtg ctg aga tat agg 240  
Ser Val Leu Leu Pro Arg Phe Ala Phe Thr Thr Val Leu Arg Tyr Arg  
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gaa agg aat ggg aac aag gaa gcc atc gcc ggc ctc tcc agc tct gga 288  
 Glu Arg Asn Gly Asn Lys Glu Ala Ile Ala Gly Leu Ser Ser Ser Gly  
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ggc ttc aca gct tgc ctc ctc ctt cgt ctg ttg agt cat ccc aca cgc 336  
 Gly Phe Thr Ala Cys Leu Leu Leu Arg Leu Leu Ser His Pro Thr Arg  
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aac cac aac tat gtg gga gat tct gtg cca ggc ttt ggc aac taa 381  
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Leu Thr His Trp Tyr Tyr Leu Thr Ala Phe Asp Ile Ser Arg Val Asn  
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Thr Cys Phe Pro Phe Ser Thr Ala Ser Asn Ile Ser His Gly Phe Ser  
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Ser Val Leu Leu Pro Arg Phe Ala Phe Thr Thr Val Leu Arg Tyr Arg  
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Glu Arg Asn Gly Asn Lys Glu Ala Ile Ala Gly Leu Ser Ser Ser Gly  
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Lys Leu Val Ser Ser Glu Arg Ala Ser Gly Glu Ala Leu Lys Leu His	
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Val Arg Val Pro Leu Ser Met Gln Tyr Ala Asp Leu Ile Ile Lys Ile	
85 90 95	
aac acc ttt agt att caa gca gct cat atc act cac aaa ttt ctc ttt	336
Asn Thr Phe Ser Ile Gln Ala Ala His Ile Thr His Lys Phe Leu Phe	
100 105 110	
aac aaa gaa agg cat gca ttt cat aca cgg gga caa ttc ggt cag att	384
Asn Lys Glu Arg His Ala Phe His Thr Arg Gly Gln Phe Gly Gln Ile	
115 120 125	
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Val Ser Ser Gln Tyr Leu Tyr Glu Ile Asn Cys Thr Glu Gly Met Pro	
130 135 140	
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Ile Phe Thr Arg Arg Thr Lys Val Glu Val Asn Asn Phe Glu Ala Trp	
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165

170

175

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 35 40 45

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Pro Leu Leu Asp Tyr Asn His Met Ile Leu Ser Asn Leu Ala Pro Asp  
 65 70 75 80

Val Arg Val Pro Leu Ser Met Gln Tyr Ala Asp Leu Ile Ile Lys Ile  
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Asn Lys Glu Arg His Ala Phe His Thr Arg Gly Gln Phe Gly Gln Ile  
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 Pro Pro Leu Phe Ser Gln Cys Gly Gly Ser Gly Cys Ser Arg Gln Pro  
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 Gly Ala Lys Ala Ala Pro Glu Pro Leu Glu Glu Leu Ser Lys Met Arg  
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 Ser Leu Ser Ser Ile Pro Trp Tyr Ile Leu Ser Phe Ser Ser Ala Glu  
 65 70 75 80

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 85 90 95

ctt gac att agc aga gga agt cca gct gtg tac act aat tat gat aaa 336  
 Leu Asp Ile Ser Arg Gly Ser Pro Ala Val Tyr Thr Asn Tyr Asp Lys  
 100 105 110

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 His Pro Phe Thr Met Ser Gly Arg Arg Leu Ala Thr Asp Leu Glu Arg  
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 65 70 75 80  
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 Leu Asp Ile Ser Arg Gly Ser Pro Ala Val Tyr Thr Asn Tyr Asp Lys  
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Pro Val Val His His Glu Thr Thr Gly Ile Gln Thr Thr Val Val Phe	
85 90 95	
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Trp Pro Ala Lys Leu Gln Ala Ser Ser Arg Val Val Met Phe Arg Phe	
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Glu Phe Trp Asp Cys Gly Glu Ser Ala Leu Lys Lys Phe Asp His Met	
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145 150 155 160	
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165 170 175	
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180 185 190	
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Phe Arg Gln Ala Trp Glu Leu Pro Leu Leu Arg Val Lys Ser Val Pro	
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Gly Arg Arg Leu Ala Asp Gly Arg Thr Leu Asp Gly Arg Ala Gly Leu	
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225 230 235 240	
cag gac cag acg gcg atg acg cca ccg aca gga cga cga ctg tgt ctc	768
Gln Asp Gln Thr Ala Met Thr Pro Pro Thr Gly Arg Arg Leu Cys Leu	
245 250 255	
gcg ccc tgc ggc ggc att tat gtg ccg gac tct agg ggt aca ttt tct	816
Ala Pro Cys Gly Gly Ile Tyr Val Pro Asp Ser Arg Gly Thr Phe Ser	
260 265 270	
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Glu Thr Gly Lys Pro Ala Leu Ile Lys Val Gly Gln Ser Gly Val Arg	
275 280 285	
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Arg Leu Gly Gly Glu Ala Ala Thr Pro Ala Ala Ala Gly Glu Arg Arg	
305 310 315 320	
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Lys Tyr Gln Pro Leu Asp Gln Pro Leu Asp Lys Leu Ser Cys Leu Phe	
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385 390 395 400	



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His Trp Asp Cys Ser Asp Phe Gln Asp Gln Glu Ala Met Pro Ser Ser	
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Glu Glu Cys Pro His Leu Gln Phe Ala Ala Leu Ala Leu Gln Met Thr	
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Cys Leu Ser His Leu Leu Thr Ser Ser Ala Ala Ile Leu Thr Val Leu	
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Cys Val Val Met Ile Phe Leu Val Ser Val Ile Ile Tyr His Gly Ile	
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Val Thr Gln Gln Leu Ile Ile Ile Met Val Gly Lys Gln Leu Leu Asn	
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His Met Glu Glu Phe Val Gly Leu Gly Gly Gly Pro Gly Pro Asp Thr	
595 600 605	
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Pro Cys Leu Pro Glu Leu Gln Phe Gly Phe Ile Thr Ile Phe Val Gly	
610 615 620	
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Ala Phe Leu Leu Ala Pro Leu Phe Thr Leu Leu Asn Asn Arg Val Glu	
625 630 635 640	
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Ile Gly Leu Asp Ala His Lys Phe Leu Cys Lys Tyr Gln Arg Pro Met	
645 650 655	
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660 665 670	
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Cys Glu Leu Ile Leu Pro Arg Thr Asn Ala Arg Ser Arg Leu Gly Tyr	
675 680 685	
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Ala Gly Phe Gly Val Glu Ile Arg Glu Pro Leu Gln Thr Pro Gln Pro	
705 710 715 720	
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Arg Tyr Lys Ala Ser Arg Asp Val Gly Val Asn Leu Ala Leu Phe Tyr	
725 730 735	
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Glu Gly Leu Met Asn Gln Thr Leu Cys Leu Gly Gly Ile Ser Pro Ser	
755 760 765	
cag ctg ggc aga gag agg gct tcc cct gcc gga aca gcc aaa cag cat	2352
Gln Leu Gly Arg Glu Arg Ala Ser Pro Ala Gly Thr Ala Lys Gln His	
770 775 780	

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995 1000 1005	
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Asp Glu Ala Glu Gly Ala Glu Glu Gly Pro Gly Pro Pro Arg Ala Asn	
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Thr Phe Ser Leu Trp Gln Asp Ile Pro Asp Val Arg Gly Ser Gly Val	
1155 1160 1165	



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Ala Ser Val Gln Ser Met Lys Arg Thr Glu Glu Leu Ile His Leu Ser	
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Ala Ala Pro Pro Ala Lys Leu Lys Leu Ser Ser Lys Ala Val Tyr Leu	
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Gln Leu Leu His Gly Gln His Met Lys His Gln Phe Leu Leu Arg Ala	
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acc ttg gag aag act gac atc ctg tca gtg agg acc tgg acc agt gac	4656
Thr Leu Glu Lys Thr Asp Ile Leu Ser Val Arg Thr Trp Thr Ser Asp	
1540 1545 1550	

ggc tgg ctg gaa ggg gtc cgc ctg gca gat ggt gag aag ggg tgg gtg 4704  
 Gly Trp Leu Glu Gly Val Arg Leu Ala Asp Gly Glu Lys Gly Trp Val  
 1555 1560 1565

ccc cag gcc tat gtg gaa gag atc agc agc ctc agc gcc cgc ctc cga 4752  
 Pro Gln Ala Tyr Val Glu Glu Ile Ser Ser Leu Ser Ala Arg Leu Arg  
 1570 1575 1580

aac ctc cgg gag aat aag cga gtc aca agt gcc acc agc aaa ctg ggg 4800  
 Asn Leu Arg Glu Asn Lys Arg Val Thr Ser Ala Thr Ser Lys Leu Gly  
 1585 1590 1595 1600

gag gct cct gtg tga 4815  
 Glu Ala Pro Val

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 <213> Homo sapiens

<400> 8  
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Glu Ser Ala Glu Gly Lys Glu Tyr Leu Ala Cys Ile Leu Arg Lys Asn  
 20 25 30

Arg Arg Arg Val Phe Gly Leu Leu Glu Arg Pro Val Leu Leu Pro Pro  
 35 40 45

Val Ser Ile Asp Thr Ala Ser Tyr Lys Ile Phe Val Ser Gly Lys Ser  
 50 55 60

Gly Val Gly Lys Thr Ala Leu Val Ala Lys Leu Ala Gly Leu Glu Val  
 65 70 75 80

Pro Val Val His His Glu Thr Thr Gly Ile Gln Thr Thr Val Val Phe  
 85 90 95

Trp Pro Ala Lys Leu Gln Ala Ser Ser Arg Val Val Met Phe Arg Phe  
 100 105 110

Glu Phe Trp Asp Cys Gly Glu Ser Ala Leu Lys Lys Phe Asp His Met  
 115 120 125

Leu Leu Ala Cys Met Glu Asn Thr Asp Ala Phe Leu Phe Leu Phe Ser

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130	135	140
Phe Thr Asp Arg Ala Ser	Phe Glu Asp Leu Pro	Gly Gln Leu Ala Arg
145	150	155 160
Ile Ala Gly Glu Ala Pro	Gly Val Val Arg Met Val	Ile Gly Ser Lys
165	170	175
Phe Asp Gln Tyr Met His Thr	Asp Val Pro Glu Arg Asp	Leu Thr Ala
180	185	190
Phe Arg Gln Ala Trp Glu Leu	Pro Leu Leu Arg Val	Lys Ser Val Pro
195	200	205
Gly Arg Arg Leu Ala Asp	Gly Arg Thr Leu Asp	Gly Arg Ala Gly Leu
210	215	220
Ala Asp Val Ala His Ile Leu	Asn Gly Leu Ala Glu Gln	Leu Trp His
225	230	235 240
Gln Asp Gln Thr Ala Met Thr	Pro Pro Thr Gly Arg Arg	Leu Cys Leu
245	250	255
Ala Pro Cys Gly Gly Ile Tyr	Val Pro Asp Ser Arg Gly	Thr Phe Ser
260	265	270
Glu Thr Gly Lys Pro Ala Leu	Ile Lys Val Gly Gln Ser	Gly Val Arg
275	280	285
Pro Leu Leu Thr Val Pro Leu	Thr Pro Arg Trp Val Arg	Leu Arg Ala
290	295	300
Arg Leu Gly Gly Glu Ala Ala	Thr Pro Ala Ala Ala Gly	Glu Arg Arg
305	310	315 320
Leu Arg Gln Arg Arg Trp Arg	Glu Asn Phe Gln Arg Asn	Leu Glu Glu
325	330	335
Gly Leu Phe Glu Leu Pro Gly	Tyr Gln Val Pro Gly Ser	Asp Leu Asn
340	345	350
Ser Cys Gln Leu Leu Tyr Pro	Tyr Trp Ala Cys Trp Gly	Tyr Trp His
355	360	365
Lys Tyr Gln Pro Leu Asp Gln	Pro Leu Asp Lys Leu Ser	Cys Leu Phe
370	375	380
Asp His Pro Gly Thr Val Phe	Phe Ser Ile Phe Met Ser	Phe Trp Gly



100120-16494760

385		390		395		400
His Gly Leu Pro Gly Ala Leu Glu Ala Gly Ser Ala Thr Leu Ala His						
	405		410		415	
His Trp Asp Cys Ser Asp Phe Gln Asp Gln Glu Ala Met Pro Ser Ser						
	420		425		430	
Ala Pro His His Trp Asp Cys Ser Asp Phe Gln Asp Gln Glu Val Met						
	435		440		445	
Pro Ser Ser Ala Leu His His Trp Asp Cys Ser Asp Phe Gln Asp Gln						
	450		455		460	
Glu Glu Cys Pro His Leu Gln Phe Ala Ala Leu Ala Leu Gln Met Thr						
	465		470		475	480
Gln Asn Pro Val Thr Gly Leu Lys Glu Pro Tyr Phe Gln Pro His Ser						
	485		490		495	
Cys Leu Ser His Leu Leu Thr Ser Ser Ala Ala Ile Leu Thr Val Leu						
	500		505		510	
Cys Val Val Met Ile Phe Leu Val Ser Val Ile Ile Tyr His Gly Ile						
	515		520		525	
Ile Ser Ile Ala Met Phe His Thr Gly Asn Ser Val Leu Met Thr Gln						
	530		535		540	
Ala Asn Val Leu Trp Gly Asn Gly Gly Pro Lys Ala Leu Ser Lys Val						
	545		550		555	560
Leu Cys Val Cys Gln Gln Gln Cys Gly Pro Gly Gly Cys His Ile Gln						
	565		570		575	
Val Thr Gln Gln Leu Ile Ile Ile Met Val Gly Lys Gln Leu Leu Asn						
	580		585		590	
His Met Glu Glu Phe Val Gly Leu Gly Gly Gly Pro Gly Pro Asp Thr						
	595		600		605	
Pro Cys Leu Pro Glu Leu Gln Phe Gly Phe Ile Thr Ile Phe Val Gly						
	610		615		620	
Ala Phe Leu Leu Ala Pro Leu Phe Thr Leu Leu Asn Asn Arg Val Glu						
	625		630		635	640
Ile Gly Leu Asp Ala His Lys Phe Leu Cys Lys Tyr Gln Arg Pro Met						

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Ala Gly Arg Gly Trp Thr Ser Gly Ser Asp Cys Ser Cys Trp Arg Pro	645	650	655
660	665	670	
Cys Glu Leu Ile Leu Pro Arg Thr Asn Ala Arg Ser Arg Leu Gly Tyr	675	680	685
Trp Leu Asn Gly Gln Gly Gln Ile Leu Gly Arg Arg Arg Gly Gly Asn	690	695	700
Ala Gly Phe Gly Val Glu Ile Arg Glu Pro Leu Gln Thr Pro Gln Pro	705	710	715
720			
Arg Tyr Lys Ala Ser Arg Asp Val Gly Val Asn Leu Ala Leu Phe Tyr	725	730	735
Trp Lys Leu Leu Ala Val His Val His Leu Gly Phe Ile Ile Ala Phe	740	745	750
Glu Gly Leu Met Asn Gln Thr Leu Cys Leu Gly Gly Ile Ser Pro Ser	755	760	765
Gln Leu Gly Arg Glu Arg Ala Ser Pro Ala Gly Thr Ala Lys Gln His	770	775	780
Gln Gln Arg Ala Trp Ala Gln Arg Gly Pro Gly Gly Trp Gln Ser Lys	785	790	795
800			
Arg Gly Met Asp Cys Gly Pro Pro Ala Thr Leu Gln Pro His Leu Thr	805	810	815
Gly Pro Pro Gly Thr Ala His His Pro Val Ala Val Cys Gln Gln Glu	820	825	830
Ser Leu Ser Phe Ala Glu Leu Pro Ala Leu Lys Pro Pro Ser Pro Val	835	840	845
Cys Leu Asp Leu Phe Pro Val Ala Pro Glu Glu Leu Arg Ala Pro Gly	850	855	860
Ser Arg Trp Ser Leu Gly Thr Pro Ala Pro Leu Gln Gly Leu Leu Trp	865	870	875
880			
Pro Leu Ser Pro Gly Gly Ser Asp Thr Glu Ile Thr Ser Gly Gly Met	885	890	895
Arg Pro Ser Arg Ala Gly Ser Trp Pro His Cys Pro Gly Ala Gln Pro			



1155

1160

1165

Leu Ala Thr Leu Ser Leu Arg Asp Cys Lys Leu Gln Glu Ala Lys Phe  
 1170 1175 1180

Glu Leu Ile Thr Ser Glu Ala Ser Tyr Ile His Ser Leu Ser Val Ala  
 1185 1190 1195 1200

Val Gly His Phe Leu Gly Ser Ala Glu Leu Ser Glu Cys Leu Gly Ala  
 1205 1210 1215

Gln Asp Lys Gln Trp Leu Phe Ser Lys Leu Pro Glu Val Lys Ser Thr  
 1220 1225 1230

Ser Glu Arg Phe Leu Gln Asp Leu Glu Gln Arg Leu Glu Ala Asp Val  
 1235 1240 1245

Leu Arg Phe Ser Val Cys Asp Val Val Leu Asp His Cys Pro Ala Phe  
 1250 1255 1260

Arg Arg Val Tyr Leu Pro Tyr Val Thr Asn Gln Ala Tyr Gln Glu Arg  
 1265 1270 1275 1280

Thr Tyr Gln Arg Leu Leu Leu Glu Asn Pro Arg Phe Pro Gly Ile Leu  
 1285 1290 1295

Ala Arg Leu Glu Glu Ser Pro Val Cys Gln Arg Leu Pro Leu Thr Ser  
 1300 1305 1310

Phe Leu Ile Leu Pro Phe Gln Arg Ile Thr Arg Leu Lys Met Leu Val  
 1315 1320 1325

Glu Asn Ile Leu Lys Arg Thr Ala Gln Gly Ser Glu Asp Glu Asp Met  
 1330 1335 1340

Ala Thr Lys Ala Phe Asn Ala Leu Lys Glu Leu Val Gln Glu Cys Asn  
 1345 1350 1355 1360

Ala Ser Val Gln Ser Met Lys Arg Thr Glu Glu Leu Ile His Leu Ser  
 1365 1370 1375

Lys Lys Ile His Phe Glu Gly Lys Ile Phe Pro Leu Ile Ser Gln Ala  
 1380 1385 1390

Arg Trp Leu Val Arg His Gly Glu Leu Val Glu Leu Ala Pro Leu Pro  
 1395 1400 1405

Ala Ala Pro Pro Ala Lys Leu Lys Leu Ser Ser Lys Ala Val Tyr Leu

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1410	1415	1420
His Leu Phe Asn Asp Cys Leu Leu Leu Ser Arg Arg Lys Glu Leu Gly		
1425	1430	1435 1440
Lys Phe Ala Val Phe Val His Ala Lys Met Ala Glu Leu Gln Val Arg		
1445	1450	1455
Asp Leu Ser Leu Lys Leu Gln Gly Ile Pro Gly His Val Phe Leu Leu		
1460	1465	1470
Gln Leu Leu His Gly Gln His Met Lys His Gln Phe Leu Leu Arg Ala		
1475	1480	1485
Arg Thr Glu Ser Glu Lys Gln Arg Trp Ile Ser Ala Leu Cys Pro Ser		
1490	1495	1500
Ser Pro Gln Glu Asp Lys Glu Val Ile Ser Glu Gly Glu Asp Cys Pro		
1505	1510	1515 1520
Gln Val Gln Cys Val Arg Thr Tyr Lys Ala Leu His Pro Asp Glu Leu		
1525	1530	1535
Thr Leu Glu Lys Thr Asp Ile Leu Ser Val Arg Thr Trp Thr Ser Asp		
1540	1545	1550
Gly Trp Leu Glu Gly Val Arg Leu Ala Asp Gly Glu Lys Gly Trp Val		
1555	1560	1565
Pro Gln Ala Tyr Val Glu Glu Ile Ser Ser Leu Ser Ala Arg Leu Arg		
1570	1575	1580
Asn Leu Arg Glu Asn Lys Arg Val Thr Ser Ala Thr Ser Lys Leu Gly		
1585	1590	1595 1600
Glu Ala Pro Val		

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 Xaa Asp Asp Glu Gln Asn Met Ile Ser Ile Leu Ser Leu Val Ser Val  
 1 5 10 15

acc att gct gtg ttc atc cca gtt gcc tgt gac agt cat gat caa caa 96  
Thr Ile Ala Val Phe Ile Pro Val Ala Cys Asp Ser His Asp Gln Gln  
20 25 30

gtc tgc acc atg acc ttc tca tct cca tat cca gtg ccc aag tta ttc 144  
Val Cys Thr Met Thr Phe Ser Ser Pro Tyr Pro Val Pro Lys Leu Phe  
35 40 45

ctt tcc cca act gca ggc ccc cca aca gga tgt ggg cag cct gca tct 192  
Leu Ser Pro Thr Ala Gly Pro Pro Thr Gly Cys Gly Gln Pro Ala Ser  
50 55 60

ccg ctg gac tgg agc caa aat gcc aaa gca cag cac ctt cga gtt cca 240  
Pro Leu Asp Trp Ser Gln Asn Ala Lys Ala Gln His Leu Arg Val Pro  
65 70 75 80

tgc ctc cag aag ggc ttg tcc ctg cgc act ggg atg gtg ctt gtt tgc 288  
Cys Leu Gln Lys Gly Leu Ser Leu Arg Thr Gly Met Val Leu Val Cys  
85 90 95

aag gtt ata gat gag aaa act gct gcc ttg tcg gaa gga aag gtg ctg 336  
Lys Val Ile Asp Glu Lys Thr Ala Ala Leu Ser Glu Gly Lys Val Leu  
100 105 110

ttt ggt ctc ttc gct ggc atc ccc atc ttt agg aat tcc agc cca aac 384  
Phe Gly Leu Phe Ala Gly Ile Pro Ile Phe Arg Asn Ser Ser Pro Asn  
115 120 125

aag ccg cct tcc aat tag 402  
Lys Pro Pro Ser Asn  
130

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<210> 10
<211> 133
<212> PRT
<213> Homo sapiens
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<220>  
 <221> variant  
 <222> (1)..(133)  
 <223> Wherein Xaa is any amino acid.

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 1 5 10 15  
 Thr Ile Ala Val Phe Ile Pro Val Ala Cys Asp Ser His Asp Gln Gln  
 20 25 30  
 Val Cys Thr Met Thr Phe Ser Ser Pro Tyr Pro Val Pro Lys Leu Phe  
 35 40 45  
 Leu Ser Pro Thr Ala Gly Pro Pro Thr Gly Cys Gly Gln Pro Ala Ser  
 50 55 60  
 Pro Leu Asp Trp Ser Gln Asn Ala Lys Ala Gln His Leu Arg Val Pro  
 65 70 75 80  
 Cys Leu Gln Lys Gly Leu Ser Leu Arg Thr Gly Met Val Leu Val Cys  
 85 90 95  
 Lys Val Ile Asp Glu Lys Thr Ala Ala Leu Ser Glu Gly Lys Val Leu  
 100 105 110  
 Phe Gly Leu Phe Ala Gly Ile Pro Ile Phe Arg Asn Ser Ser Pro Asn  
 115 120 125  
 Lys Pro Pro Ser Asn  
 130

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 1 5 10 15

ctg tgg ctg ctg cag gtc agt atc att gac agt gtt caa cag gaa aca	96
Leu Trp Leu Leu Gln Val Ser Ile Ile Asp Ser Val Gln Gln Glu Thr	
20 25 30	
gat gat ctt act aag caa aca aag tgt cac tat aag ttc cag gaa aag	144
Asp Asp Leu Thr Lys Gln Thr Lys Cys His Tyr Lys Phe Gln Glu Lys	
35 40 45	
atc tac cag cct cta cgg cga tcc aag aga aga tgg gtt atc acc acc	192
Ile Tyr Gln Pro Leu Arg Arg Ser Lys Arg Arg Trp Val Ile Thr Thr	
50 55 60	
ttg gag ctg gag gag gaa gac ccg gga ccc ttt ccc aaa ctc att ggt	240
Leu Glu Leu Glu Glu Glu Asp Pro Gly Pro Phe Pro Lys Leu Ile Gly	
65 70 75 80	
gag ctg ttc aat aat atg tct tat aac atg tca cta atg tat cta atc	288
Glu Leu Phe Asn Asn Met Ser Tyr Asn Met Ser Leu Met Tyr Leu Ile	
85 90 95	
agt gga cct ggt gtg gat gaa tat cca gag att ggt ttg ttt tct cta	336
Ser Gly Pro Gly Val Asp Glu Tyr Pro Glu Ile Gly Leu Phe Ser Leu	
100 105 110	
gaa gat cat gag aac gga agg ata tat gtt cac cgc cct gtc gat cga	384
Glu Asp His Glu Asn Gly Arg Ile Tyr Val His Arg Pro Val Asp Arg	
115 120 125	
gaa atg aca cca tct ttc acg agc tgg aca gca agg gtg cct tcc tcc	432
Glu Met Thr Pro Ser Phe Thr Ser Trp Thr Ala Arg Val Pro Ser Ser	
130 135 140	
agg gct tcc gcg ggg atg agc aga ggc cat cta cgg gaa ggg ctg gtg	480
Arg Ala Ser Ala Gly Met Ser Arg Gly His Leu Arg Glu Gly Leu Val	
145 150 155 160	
ctg gtt tat ttt gat gtt gtg gag cgc tca aca gga aaa att gtg gat	528
Leu Val Tyr Phe Asp Val Val Glu Arg Ser Thr Gly Lys Ile Val Asp	
165 170 175	
aca tcc ttg att ttc aac att agg atc agt gat gtg aat gat cat gca	576
Thr Ser Leu Ile Phe Asn Ile Arg Ile Ser Asp Val Asn Asp His Ala	
180 185 190	
ccc cag ttt cca gag aag gaa ttt aac atc act gtg caa gaa aac caa	624
Pro Gln Phe Pro Glu Lys Glu Phe Asn Ile Thr Val Gln Glu Asn Gln	
195 200 205	



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Ser Ala Gly Gln Pro Ile Phe Gln Met Leu Ala Val Asp Leu Asp Glu	
210 215 220	
 gaa aac act cca aat tct caa gtc ctt tac ttc ctc att tct caa aca	720
Glu Asn Thr Pro Asn Ser Gln Val Leu Tyr Phe Leu Ile Ser Gln Thr	
225 230 235 240	
 cca tta ctg aaa gaa agt ggt ttc cgg gtt gat cgc ctt agt gga gaa	768
Pro Leu Leu Lys Glu Ser Gly Phe Arg Val Asp Arg Leu Ser Gly Glu	
245 250 255	
 ata cga ctc tct ggc tgc tta gat tat gag acc gct cct cag ttt aca	816
Ile Arg Leu Ser Gly Cys Leu Asp Tyr Glu Thr Ala Pro Gln Phe Thr	
260 265 270	
 ctg cta atc aga gcc agg gac tgt gga gaa ccg tca ctg tca tcc acg	864
Leu Leu Ile Arg Ala Arg Asp Cys Gly Glu Pro Ser Leu Ser Ser Thr	
275 280 285	
 acc acc gtt cac gtg gat gtg caa gaa ggc aac aac cac agg cct gca	912
Thr Thr Val His Val Asp Val Gln Glu Gly Asn Asn His Arg Pro Ala	
290 295 300	
 ttt acc cag gag aac tat aag gtt cag att cct gaa ggc cga gcc agc	960
Phe Thr Gln Glu Asn Tyr Lys Val Gln Ile Pro Glu Gly Arg Ala Ser	
305 310 315 320	
 cag ggc gtg ttg cgt ctc ctg gtt caa gat cga gat tct cca ttt aca	1008
Gln Gly Val Leu Arg Leu Leu Val Gln Asp Arg Asp Ser Pro Phe Thr	
325 330 335	
 tca gct tgg aga gca aaa ttc aac ata ttg cat ggc aat gaa gag ggg	1056
Ser Ala Trp Arg Ala Lys Phe Asn Ile Leu His Gly Asn Glu Glu Gly	
340 345 350	
 cat ttt gac att tcg act gac cct gag acc aac gaa ggg ata tta aat	1104
His Phe Asp Ile Ser Thr Asp Pro Glu Thr Asn Glu Gly Ile Leu Asn	
355 360 365	
 gtt atc aag cct ttg gat tat gag act cgc cca gcg caa agc ctc atc	1152
Val Ile Lys Pro Leu Asp Tyr Glu Thr Arg Pro Ala Gln Ser Leu Ile	
370 375 380	
 att gtc gtg gag aat gag gag agg ctc gtc ttc tgt gag aga gga aag	1200
Ile Val Val Glu Asn Glu Glu Arg Leu Val Phe Cys Glu Arg Gly Lys	
385 390 395 400	

ctt cag ccg cca agg aag gca gca gcc agc gcc act gtg agt gtg cag	1248
Leu Gln Pro Pro Arg Lys Ala Ala Ala Ser Ala Thr Val Ser Val Gln	
405 410 415	
gtg aca gac gcc aac gac cca cca gcc ttt cac ccc cag agc ttc att	1296
Val Thr Asp Ala Asn Asp Pro Pro Ala Phe His Pro Gln Ser Phe Ile	
420 425 430	
gtc aat aaa gag gag ggc gcc agg cct ggg acc ctg ttg gga act ttt	1344
Val Asn Lys Glu Glu Gly Ala Arg Pro Gly Thr Leu Leu Gly Thr Phe	
435 440 445	
aat gcc atg gat cca gac agc cag ata aga tat gaa ctg gtt cat gac	1392
Asn Ala Met Asp Pro Asp Ser Gln Ile Arg Tyr Glu Leu Val His Asp	
450 455 460	
cca gca aat tgg gtc agc gtc gac aaa aac tcc gga gtg gtc atc acc	1440
Pro Ala Asn Trp Val Ser Val Asp Lys Asn Ser Gly Val Val Ile Thr	
465 470 475 480	
gtg gag cca att gac cga gaa tcc cct cat gta aat aac agt ttt tat	1488
Val Glu Pro Ile Asp Arg Glu Ser Pro His Val Asn Asn Ser Phe Tyr	
485 490 495	
gta atc atc att cac gct gtt gat gat ggc ttc cca ccg cag act gct	1536
Val Ile Ile Ile His Ala Val Asp Asp Gly Phe Pro Pro Gln Thr Ala	
500 505 510	
aca ggg acc cta atg ctc ttc ctg tct gac atc aat gac aac gtc ccg	1584
Thr Gly Thr Leu Met Leu Phe Leu Ser Asp Ile Asn Asp Asn Val Pro	
515 520 525	
act ctc cgg cca cgt tcc cgc tac atg gag gtc tgt gag tct gct gtg	1632
Thr Leu Arg Pro Arg Ser Arg Tyr Met Glu Val Cys Glu Ser Ala Val	
530 535 540	
cat gag ccc ctc cac atc gag gca gag gat ccg gac ctg gag ccg ttc	1680
His Glu Pro Leu His Ile Glu Ala Glu Asp Pro Asp Leu Glu Pro Phe	
545 550 555 560	
tct gac cca ttt aca ttt gaa ttg gac aat acc tgg gga aat gcg gag	1728
Ser Asp Pro Phe Thr Phe Glu Leu Asp Asn Thr Trp Gly Asn Ala Glu	
565 570 575	
gac aca tgg aag ttg ggg aga aat tgg gga aac tct cct cat cag ggg	1776
Asp Thr Trp Lys Leu Gly Arg Asn Trp Gly Asn Ser Pro His Gln Gly	
580 585 590	

gta gga ggc tgc tgg gag tcc ctg aga cat att ctt gca tct ggc aag	1824
Val Gly Gly Cys Trp Glu Ser Leu Arg His Ile Leu Ala Ser Gly Lys	
595 600 605	
aag ggt gtt tcc agg gaa gct cca gga ttg acg tca ctg ttt ggc ctg	1872
Lys Gly Val Ser Arg Glu Ala Pro Gly Leu Thr Ser Leu Phe Gly Leu	
610 615 620	
ggt caa tca gtt gaa ctt tta acc ttg aga agc ctg cca cgt ggt aat	1920
Gly Gln Ser Val Glu Leu Leu Thr Leu Arg Ser Leu Pro Arg Gly Asn	
625 630 635 640	
tac ttg gtg cca ctc ttc att gga gac aaa cag gga ctt tcc cag aag	1968
Tyr Leu Val Pro Leu Phe Ile Gly Asp Lys Gln Gly Leu Ser Gln Lys	
645 650 655	
caa act gtc cat gta agg atc tgc ccc tgt gcc agt ggg ctc aca tgt	2016
Gln Thr Val His Val Arg Ile Cys Pro Cys Ala Ser Gly Leu Thr Cys	
660 665 670	
gtg gag ctt gca gat gca gaa gtg ggg ctt cat gtg ggg gcc ctg ttc	2064
Val Glu Leu Ala Asp Ala Glu Val Gly Leu His Val Gly Ala Leu Phe	
675 680 685	
cct gtc tgt gca gca ttt gtg gct ctg gca gtg gct ctg ctt ttt ctg	2112
Pro Val Cys Ala Ala Phe Val Ala Leu Ala Val Ala Leu Leu Phe Leu	
690 695 700	
ttg cga tgc tat ttt gtg ctt gaa cct aag agg cat gga tgc tct gta	2160
Leu Arg Cys Tyr Phe Val Leu Glu Pro Lys Arg His Gly Cys Ser Val	
705 710 715 720	
tcc aat gat gaa ggc cac caa aca ctg gtc atg tat aat gcg gag agc	2208
Ser Asn Asp Glu Gly His Gln Thr Leu Val Met Tyr Asn Ala Glu Ser	
725 730 735	
aaa ggc act tca gcc cag aca tgg tca gat gtt gaa ggc cag agg ccg	2256
Lys Gly Thr Ser Ala Gln Thr Trp Ser Asp Val Glu Gly Gln Arg Pro	
740 745 750	
gct ctg ctc atc tgc aca gct gca gca gga ccc acg cag gga gtt aag	2304
Ala Leu Leu Ile Cys Thr Ala Ala Gly Pro Thr Gln Gly Val Lys	
755 760 765	
ggg agg gaa cca aag cct cca cct tct agg ttt tgg tgt atc tct ggg	2352
Gly Arg Glu Pro Lys Pro Pro Pro Ser Arg Phe Trp Cys Ile Ser Gly	
770 775 780	





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ccc agc tac aga tct tta ccc cag aga cca tct tgg gcc tcc ctc cag 3552  
Pro Ser Tyr Arg Ser Leu Pro Gln Arg Pro Ser Trp Ala Ser Leu Gln  
1170 1175 1180

gct ttt gct tac tct gtg ccc tca tcc tgg agt cct gtc ccc acc cct 3600  
Ala Phe Ala Tyr Ser Val Pro Ser Ser Trp Ser Pro Val Pro Thr Pro  
1185 1190 1195 1200

atc tac aga aac tcc acc agc cct cct ggc tgc ccc gat ggt cct cgc 3648  
Ile Tyr Arg Asn Ser Thr Ser Pro Pro Gly Cys Pro Asp Gly Pro Arg  
1205 1210 1215

aca ggg aga ctt gtc tac ctc ccg agg tca cgt gtg ggc tct ggt cct 3696  
Thr Gly Arg Leu Val Tyr Leu Pro Arg Ser Arg Val Gly Ser Gly Pro  
1220 1225 1230

ctt gcc atc atg gca gag att ttg ctg tat ctc ccc ctg gct gct ggt 3744  
Leu Ala Ile Met Ala Glu Ile Leu Leu Tyr Leu Pro Leu Ala Ala Gly  
1235 1240 1245

gct ctg ctt acc tcc tcc aga gtt gtt aac aaa gag ctg agg atg ctg 3792  
Ala Leu Leu Thr Ser Ser Arg Val Val Asn Lys Glu Leu Arg Met Leu  
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1265 1270

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Leu Trp Leu Leu Gln Val Ser Ile Ile Asp Ser Val Gln Gln Glu Thr  
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Asp Asp Leu Thr Lys Gln Thr Lys Cys His Tyr Lys Phe Gln Glu Lys  
35 40 45

Ile Tyr Gln Pro Leu Arg Arg Ser Lys Arg Arg Trp Val Ile Thr Thr  
50 55 60

Leu Glu Leu Glu Glu Glu Asp Pro Gly Pro Phe Pro Lys Leu Ile Gly

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65		70		75		80									
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			85					90					95		
Ser	Gly	Pro	Gly	Val	Asp	Glu	Tyr	Pro	Glu	Ile	Gly	Leu	Phe	Ser	Leu
		100						105				110			
Glu	Asp	His	Glu	Asn	Gly	Arg	Ile	Tyr	Val	His	Arg	Pro	Val	Asp	Arg
		115					120					125			
Glu	Met	Thr	Pro	Ser	Phe	Thr	Ser	Trp	Thr	Ala	Arg	Val	Pro	Ser	Ser
	130						135				140				
Arg	Ala	Ser	Ala	Gly	Met	Ser	Arg	Gly	His	Leu	Arg	Glu	Gly	Leu	Val
145					150					155					160
Leu	Val	Tyr	Phe	Asp	Val	Val	Glu	Arg	Ser	Thr	Gly	Lys	Ile	Val	Asp
				165					170					175	
Thr	Ser	Leu	Ile	Phe	Asn	Ile	Arg	Ile	Ser	Asp	Val	Asn	Asp	His	Ala
		180						185					190		
Pro	Gln	Phe	Pro	Glu	Lys	Glu	Phe	Asn	Ile	Thr	Val	Gln	Glu	Asn	Gln
		195						200					205		
Ser	Ala	Gly	Gln	Pro	Ile	Phe	Gln	Met	Leu	Ala	Val	Asp	Leu	Asp	Glu
		210					215				220				
Glu	Asn	Thr	Pro	Asn	Ser	Gln	Val	Leu	Tyr	Phe	Leu	Ile	Ser	Gln	Thr
225					230					235				240	
Pro	Leu	Leu	Lys	Glu	Ser	Gly	Phe	Arg	Val	Asp	Arg	Leu	Ser	Gly	Glu
			245						250					255	
Ile	Arg	Leu	Ser	Gly	Cys	Leu	Asp	Tyr	Glu	Thr	Ala	Pro	Gln	Phe	Thr
		260						265					270		
Leu	Leu	Ile	Arg	Ala	Arg	Asp	Cys	Gly	Glu	Pro	Ser	Leu	Ser	Ser	Thr
		275					280					285			
Thr	Thr	Val	His	Val	Asp	Val	Gln	Glu	Gly	Asn	Asn	His	Arg	Pro	Ala
		290				295					300				
Phe	Thr	Gln	Glu	Asn	Tyr	Lys	Val	Gln	Ile	Pro	Glu	Gly	Arg	Ala	Ser
305					310					315				320	
Gln	Gly	Val	Leu	Arg	Leu	Leu	Val	Gln	Asp	Arg	Asp	Ser	Pro	Phe	Thr

335

Asp Thr Trp Lys Leu Gly Arg Asn Trp Gly Asn Ser Pro His Gln Gly

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580	585	590
Val Gly Gly Cys Trp Glu Ser Leu Arg His Ile Leu Ala Ser Gly Lys		
595	600	605
Lys Gly Val Ser Arg Glu Ala Pro Gly Leu Thr Ser Leu Phe Gly Leu		
610	615	620
Gly Gln Ser Val Glu Leu Leu Thr Leu Arg Ser Leu Pro Arg Gly Asn		
625	630	635
Tyr Leu Val Pro Leu Phe Ile Gly Asp Lys Gln Gly Leu Ser Gln Lys		
645	650	655
Gln Thr Val His Val Arg Ile Cys Pro Cys Ala Ser Gly Leu Thr Cys		
660	665	670
Val Glu Leu Ala Asp Ala Glu Val Gly Leu His Val Gly Ala Leu Phe		
675	680	685
Pro Val Cys Ala Ala Phe Val Ala Leu Ala Val Ala Leu Leu Phe Leu		
690	695	700
Leu Arg Cys Tyr Phe Val Leu Glu Pro Lys Arg His Gly Cys Ser Val		
705	710	715
Ser Asn Asp Glu Gly His Gln Thr Leu Val Met Tyr Asn Ala Glu Ser		
725	730	735
Lys Gly Thr Ser Ala Gln Thr Trp Ser Asp Val Glu Gly Gln Arg Pro		
740	745	750
Ala Leu Leu Ile Cys Thr Ala Ala Ala Gly Pro Thr Gln Gly Val Lys		
755	760	765
Gly Arg Glu Pro Lys Pro Pro Pro Ser Arg Phe Trp Cys Ile Ser Gly		
770	775	780
Phe Pro Ser Val Ser Cys Lys Tyr Cys Arg Ser Arg Gly Ser Ala Ser		
785	790	795
Ile Cys Ser Glu Ser Val Ser Pro Ser Thr Leu Cys Ser Gly Glu Leu		
805	810	815
Asp Ser Thr Glu Thr Gln Ile His Arg His Gly Pro Asp Glu Gln Glu		
820	825	830
Thr Ala Ser Ser Pro Ser Trp Glu Thr Met Gly Ser Pro Ala Glu Trp		



1090

1095

1100

Thr Pro Ser Phe Lys Lys Val Val Tyr Asp His Lys Glu Val Ser Leu  
1105 1110 1115 1120

Ile Cys Trp Val Gln Thr Ser Pro Glu Asp Pro Pro Pro His Ile Pro  
1125 1130 1135

Trp Ile Arg Thr His Gln Trp Phe Pro Ser Ala Trp Glu Phe Pro Phe  
1140 1145 1150

Asn Gly Leu Arg Thr Met Ser Leu Pro Phe Leu Pro Glu Ala Gln Asn  
1155 1160 1165

Pro Ser Tyr Arg Ser Leu Pro Gln Arg Pro Ser Trp Ala Ser Leu Gln  
1170 1175 1180

Ala Phe Ala Tyr Ser Val Pro Ser Ser Trp Ser Pro Val Pro Thr Pro  
1185 1190 1195 1200

Ile Tyr Arg Asn Ser Thr Ser Pro Pro Gly Cys Pro Asp Gly Pro Arg  
1205 1210 1215

Thr Gly Arg Leu Val Tyr Leu Pro Arg Ser Arg Val Gly Ser Gly Pro  
1220 1225 1230

Leu Ala Ile Met Ala Glu Ile Leu Leu Tyr Leu Pro Leu Ala Ala Gly  
1235 1240 1245

Ala Leu Leu Thr Ser Ser Arg Val Val Asn Lys Glu Leu Arg Met Leu  
1250 1255 1260

Ser Cys Pro Gly Thr Trp Leu Gln Val Ala  
1265 1270

<210> 13  
<211> 336  
<212> DNA  
<213> Homo sapiens

<220>  
<221> CDS  
<222> (1)..(333)

<400> 13  
atg gga tgc aga ctg ctg acc ctg ctg tgt ttc cta caa cct gct tcc 48  
Met Gly Cys Arg Leu Leu Thr Leu Leu Cys Phe Leu Gln Pro Ala Ser

1	5	10	15	
agc tcc tgc tgg ctc ttt ggc tcc caa tcc aga gct ttc gcg aac acc				96
Ser Ser Ser Trp Leu Phe Gly Ser Gln Ser Arg Ala Phe Ala Asn Thr				
20	25	30		
aga gcc cct gtg cct ctc cct gca gct ggc tgg gag ttc cag ggc att				144
Arg Ala Pro Val Pro Leu Pro Ala Ala Gly Trp Glu Phe Gln Gly Ile				
35	40	45		
aac aca gac agt ctt tgc cca tca gcc agt gac tgt atg gag ctt gga				192
Asn Thr Asp Ser Leu Cys Pro Ser Ala Ser Asp Cys Met Glu Leu Gly				
50	55	60		
tgt gaa tac aca gct cct gca tcc ctc cga ggc atc tcc aca ccg tct				240
Cys Glu Tyr Thr Ala Pro Ala Ser Leu Arg Gly Ile Ser Thr Pro Ser				
65	70	75	80	
ccc aga gaa tgt ctc gta aaa gct gct cct ctt ggg gag gct ctg ggc				288
Pro Arg Glu Cys Leu Val Lys Ala Ala Pro Leu Gly Glu Ala Leu Gly				
85	90	95		
ttt gga gag agc acc tgg aat tcc cca cta gaa aag ccc aaa aac tga				336
Phe Gly Glu Ser Thr Trp Asn Ser Pro Leu Glu Lys Pro Lys Asn				
100	105	110		
<210> 14				
<211> 111				
<212> PRT				
<213> Homo sapiens				
<400> 14				
Met Gly Cys Arg Leu Leu Thr Leu Leu Cys Phe Leu Gln Pro Ala Ser				
1	5	10	15	
Ser Ser Ser Trp Leu Phe Gly Ser Gln Ser Arg Ala Phe Ala Asn Thr				
20	25	30		
Arg Ala Pro Val Pro Leu Pro Ala Ala Gly Trp Glu Phe Gln Gly Ile				
35	40	45		
Asn Thr Asp Ser Leu Cys Pro Ser Ala Ser Asp Cys Met Glu Leu Gly				
50	55	60		
Cys Glu Tyr Thr Ala Pro Ala Ser Leu Arg Gly Ile Ser Thr Pro Ser				
65	70	75	80	

Pro Arg Glu Cys Leu Val Lys Ala Ala Pro Leu Gly Glu Ala Leu Gly  
85 90 95

Phe Gly Glu Ser Thr Trp Asn Ser Pro Leu Glu Lys Pro Lys Asn  
100 105 110

<210> 15  
<211> 336  
<212> DNA  
<213> Homo sapiens

<220>  
<221> CDS  
<222> (1)..(333)

<400> 15  
atg aag ctc ctt ctt ctg ctt ttg act gtt act ctg ctc ctg gcc cag 48  
Met Lys Leu Leu Leu Leu Leu Thr Val Thr Leu Leu Leu Ala Gln  
1 5 10 15  
gtc acc cca ggt ctg cca gcc atg aaa ctt ctt tac ctg ttt ctt gcc 96  
Val Thr Pro Gly Leu Pro Ala Met Lys Leu Leu Tyr Leu Phe Leu Ala  
20 25 30  
atc ctt ctg gcc ata gaa gaa cca gtg ata tca gta gag tgt tgg atg 144  
Ile Leu Leu Ala Ile Glu Glu Pro Val Ile Ser Val Glu Cys Trp Met  
35 40 45  
gat gga cac tgc cgg ttg ttg tgc aaa gat ggt gaa gac agc atc ata 192  
Asp Gly His Cys Arg Leu Leu Cys Lys Asp Gly Glu Asp Ser Ile Ile  
50 55 60  
cgc tgc cga aat cgt aaa cgg tgc tgt gtt cct agt cgt tat tta aca 240  
Arg Cys Arg Asn Arg Lys Arg Cys Cys Val Pro Ser Arg Tyr Leu Thr  
65 70 75 80  
atc caa cca gta aca att cat gga atc ctt ggc tgg acc act cct cag 288  
Ile Gln Pro Val Thr Ile His Gly Ile Leu Gly Trp Thr Thr Pro Gln  
85 90 95  
atg tcc aca aca gct cca aaa atg aag aca aat ata act aat aga tag 336  
Met Ser Thr Thr Ala Pro Lys Met Lys Thr Asn Ile Thr Asn Arg  
100 105 110

<210> 16  
<211> 111

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<212> PRT  
 <213> Homo sapiens

<400> 16  
 Met Lys Leu Leu Leu Leu Leu Leu Thr Val Thr Leu Leu Leu Ala Gln  
 1 5 10 15  
 Val Thr Pro Gly Leu Pro Ala Met Lys Leu Leu Tyr Leu Phe Leu Ala  
 20 25 30  
 Ile Leu Leu Ala Ile Glu Glu Pro Val Ile Ser Val Glu Cys Trp Met  
 35 40 45  
 Asp Gly His Cys Arg Leu Leu Cys Lys Asp Gly Glu Asp Ser Ile Ile  
 50 55 60  
 Arg Cys Arg Asn Arg Lys Arg Cys Cys Val Pro Ser Arg Tyr Leu Thr  
 65 70 75 80  
 Ile Gln Pro Val Thr Ile His Gly Ile Leu Gly Trp Thr Thr Pro Gln  
 85 90 95  
 Met Ser Thr Thr Ala Pro Lys Met Lys Thr Asn Ile Thr Asn Arg  
 100 105 110

<210> 17  
 <211> 141  
 <212> DNA  
 <213> Homo sapiens  
 <220>  
 <221> CDS  
 <222> (1)..(138)

<400> 17  
 atg gca aag gag ggg ccc cag gag ccc ttg aga ccg ctg ggc ttg ctg 48  
 Met Ala Lys Glu Gly Pro Gln Glu Pro Leu Arg Pro Leu Gly Leu Leu  
 1 5 10 15  
 cct ccc cgc att ctg gcc cag tgc tgc ttg gtc act ctg gct gtg cct 96  
 Pro Pro Arg Ile Leu Ala Gln Cys Cys Leu Val Thr Leu Ala Val Pro  
 20 25 30  
 cca gca ggc cca gct ctc aac gct ggc tgc acg gtc aag acc tag 141  
 Pro Ala Gly Pro Ala Leu Asn Ala Gly Cys Thr Val Lys Thr  
 35 40 45

<210> 18  
 <211> 46  
 <212> PRT  
 <213> Homo sapiens

<400> 18  
 Met Ala Lys Glu Gly Pro Gln Glu Pro Leu Arg Pro Leu Gly Leu Leu  
           1                  5                  10                  15  
 Pro Pro Arg Ile Leu Ala Gln Cys Cys Leu Val Thr Leu Ala Val Pro  
                   20                  25                  30  
 Pro Ala Gly Pro Ala Leu Asn Ala Gly Cys Thr Val Lys Thr  
                   35                  40                  45

<210> 19  
 <211> 558  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> CDS  
 <222> (1)..(555)

<400> 19  
 atg cac tca ctg cgg ttc cta ctg ctt ttg tgg ttg ctg ttt cct ctg 48  
 Met His Ser Leu Arg Phe Leu Leu Leu Leu Trp Leu Leu Phe Pro Leu  
           1                  5                  10                  15  
 tca ctg cta tcc ttc tct tcc cct aca gta ggg ttt ctg gac tgc ggc 96  
 Ser Leu Leu Ser Phe Ser Ser Pro Thr Val Gly Phe Leu Asp Cys Gly  
                   20                  25                  30  
 aca gtt gtc act tca gac cag gta agg gct cta tta att atg ttc tat 144  
 Thr Val Val Thr Ser Asp Gln Val Arg Ala Leu Leu Ile Met Phe Tyr  
                   35                  40                  45  
 gaa tca caa tca gat tta aaa aca aac aaa aat aaa aca aaa caa aaa 192  
 Glu Ser Gln Ser Asp Leu Lys Thr Asn Lys Asn Lys Thr Lys Gln Lys  
           50                  55                  60  
 caa aaa aga gaa ggg aag gag cgg tct gtg aac gtt aac aaa tgg aaa 240  
 Gln Lys Arg Glu Gly Lys Glu Arg Ser Val Asn Val Asn Lys Trp Lys  
           65                  70                  75                  80  
 tcc act ggg gat cag cct ctg tca gaa cta agc tcc agg aag gag gag 288

Ser Thr Gly Asp Gln Pro Leu Ser Glu Leu Ser Ser Arg Lys Glu Glu  
85 90 95

gtt cag cca gtt gag gag cca gta tca tta tca gaa ggg aat tta gga 336  
Val Gln Pro Val Glu Glu Pro Val Ser Leu Ser Glu Gly Asn Leu Gly  
100 105 110

aaa agc aag aag gtg atg aag aat gag agg gag gaa gaa aag aag gaa 384  
Lys Ser Lys Lys Val Met Lys Asn Glu Arg Glu Glu Glu Lys Lys Glu  
115 120 125

aag gaa caa act tcc agc ttc tca caa ttc cct tct gaa aga cgt aca 432  
Lys Glu Gln Thr Ser Ser Phe Ser Gln Phe Pro Ser Glu Arg Arg Thr  
130 135 140

ctg ccc atg gca agg cac gct gga tat ggg tta agt aac ccc aat ctg 480  
Leu Pro Met Ala Arg His Ala Gly Tyr Gly Leu Ser Asn Pro Asn Leu  
145 150 155 160

aaa atc caa aat cca aaa tgc tac aac atc cca aat gtt ttg agt gcc 528  
Lys Ile Gln Asn Pro Lys Cys Tyr Asn Ile Pro Asn Val Leu Ser Ala  
165 170 175

aat gtg atg atc aat gga aat gtt cac tag 558  
Asn Val Met Ile Asn Gly Asn Val His  
180 185

<210> 20  
<211> 185  
<212> PRT  
<213> Homo sapiens

<400> 20  
Met His Ser Leu Arg Phe Leu Leu Leu Leu Trp Leu Leu Phe Pro Leu  
1 5 10 15

Ser Leu Leu Ser Phe Ser Ser Pro Thr Val Gly Phe Leu Asp Cys Gly  
20 25 30

Thr Val Val Thr Ser Asp Gln Val Arg Ala Leu Leu Ile Met Phe Tyr  
35 40 45

Glu Ser Gln Ser Asp Leu Lys Thr Asn Lys Asn Lys Thr Lys Gln Lys  
50 55 60

Gln Lys Arg Glu Gly Lys Glu Arg Ser Val Asn Val Asn Lys Trp Lys  
65 70 75 80



Ser Thr Gly Asp Gln Pro Leu Ser Glu Leu Ser Ser Arg Lys Glu Glu  
85 90 95

Val Gln Pro Val Glu Glu Pro Val Ser Leu Ser Glu Gly Asn Leu Gly  
100 105 110

Lys Ser Lys Lys Val Met Lys Asn Glu Arg Glu Glu Glu Lys Lys Glu  
115 120 125

Lys Glu Gln Thr Ser Ser Phe Ser Gln Phe Pro Ser Glu Arg Arg Thr  
130 135 140

Leu Pro Met Ala Arg His Ala Gly Tyr Gly Leu Ser Asn Pro Asn Leu  
145 150 155 160

Lys Ile Gln Asn Pro Lys Cys Tyr Asn Ile Pro Asn Val Leu Ser Ala  
165 170 175

Asn Val Met Ile Asn Gly Asn Val His  
180 185

<210> 21  
<211> 1216  
<212> DNA  
<213> Homo sapiens

<400> 21  
atgcgaggagc cgagcgtgcg cgcggccggg ctggctcctgt gcaccctgtg ttacctgctg 60  
gtggggcgctg ctgtcttcga cgcgctcgag tccgaggcgg aaagcggccg ccagcgactg 120  
ctggtccaga agcggggcgc tctccggagg aagttcggct tctcggccga ggactaccgc 180  
gagctggagc gcctggcgct ccaggctgag cccaccgcg ccggccgcca gtggaagtgc 240  
cccggctcct tctacttcgc catcaccgtc atcactacca tcgagtacgg ccacgccgcg 300  
ccgggtacgg actccggcaa ggtcttctgc atgttctacg cgtccttggg catcccgtg 360  
acgctgggtca ctttccagag cctgggcgaa cggctgaacg cggtggtgcg gcgcctcctg 420  
ttggcggcca agtgctgcct gggcctgcgg tggacgtgcg tgtccacgga gaacctgggtg 480  
gtggccgggc tgctggcgctg tgccgccacc ctggccctcg gggccgtcgc cttctcgcac 540  
ttcgagggtt ggaccttctt ccacgcctac tactactgct tcatcaccct caccaccatc 600

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ggcttcggcg acttcgtggc actgcagagc ggcgaggcgc tgcagaggaa gctcccctac 660  
gtggccttca gcttcctcta catcctctcg gggctcacgg tcattggcgc cttcctcaac 720  
ctggtggtcc tgcgcttctt cgttgccagc gccgactggc ccgagcgcgc tgcccgcacc 780  
cccagcccgc gccccccggg ggcgcccag agccgtggcc tctggctgcc ccgcccgcgc 840  
gcccgcctcg tgggctccgc ctctgtcttc tgccacgtgc acaagctgga gaggtgcgcc 900  
cgcgacaacc tgggcttttc gccccctcg agcccggggg tcgtgcgtgg cgggcaggct 960  
cccaggett gggcccgggtg gaagtccatc tgacaacccc acccaggcca gggtcgaatc 1020  
tggaatggga gggctctggct tcagctatca gggcaccctc cccagggatt ggaaacggat 1080  
gacgggcctt taggcgggtt tttgccacga gcagtttttc attactgtct gtggctaagt 1140  
ccctccctc ctttccaaaa atatattaca gtcaccccat aagcccaaaa aaaaaaaaaa 1200  
aaaaaaaaaa aaaaaa 1216

<210> 22

<211> 393

<212> PRT

<213> Homo sapiens

<220>

<221> VARIANT

<222> (340)

<223> Wherein Xaa is any amino acid as defined in the  
specification

<400> 22

Met Arg Arg Pro Ser Val Arg Ala Ala Gly Leu Val Leu Cys Thr Leu  
1 5 10 15

Cys Tyr Leu Leu Val Gly Ala Ala Val Phe Asp Ala Leu Glu Ser Glu  
20 25 30

Ala Glu Ser Gly Arg Gln Arg Leu Leu Val Gln Lys Arg Gly Ala Leu  
35 40 45

Arg Arg Lys Phe Gly Phe Ser Ala Glu Asp Tyr Arg Glu Leu Glu Arg  
50 55 60

Leu Ala Leu Gln Ala Glu Pro His Arg Ala Gly Arg Gln Trp Lys Phe  
 65 70 75 80  
 Pro Gly Ser Phe Tyr Phe Ala Ile Thr Val Ile Thr Thr Ile Glu Tyr  
 85 90 95  
 Gly His Ala Ala Pro Gly Thr Asp Ser Gly Lys Val Phe Cys Met Phe  
 100 105 110  
 Tyr Ala Leu Leu Gly Ile Pro Leu Thr Leu Val Thr Phe Gln Ser Leu  
 115 120 125  
 Gly Glu Arg Leu Asn Ala Val Val Arg Arg Leu Leu Leu Ala Ala Lys  
 130 135 140  
 Cys Cys Leu Gly Leu Arg Trp Thr Cys Val Ser Thr Glu Asn Leu Val  
 145 150 155 160  
 Val Ala Gly Leu Leu Ala Cys Ala Ala Thr Leu Ala Leu Gly Ala Val  
 165 170 175  
 Ala Phe Ser His Phe Glu Gly Trp Thr Phe Phe His Ala Tyr Tyr Tyr  
 180 185 190  
 Cys Phe Ile Thr Leu Thr Thr Ile Gly Phe Gly Asp Phe Val Ala Leu  
 195 200 205  
 Gln Ser Gly Glu Ala Leu Gln Arg Lys Leu Pro Tyr Val Ala Phe Ser  
 210 215 220  
 Phe Leu Tyr Ile Leu Leu Gly Leu Thr Val Ile Gly Ala Phe Leu Asn  
 225 230 235 240  
 Leu Val Val Leu Arg Phe Leu Val Ala Ser Ala Asp Trp Pro Glu Arg  
 245 250 255  
 Ala Ala Arg Thr Pro Ser Pro Arg Pro Pro Gly Ala Pro Glu Ser Arg  
 260 265 270  
 Gly Leu Trp Leu Pro Arg Arg Pro Ala Arg Ser Val Gly Ser Ala Ser  
 275 280 285  
 Val Phe Cys His Val His Lys Leu Glu Arg Cys Ala Arg Asp Asn Leu  
 290 295 300  
 Gly Phe Ser Pro Pro Ser Ser Pro Gly Val Val Arg Gly Gly Gln Ala  
 305 310 315 320

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Pro Arg Leu Gly Ala Arg Trp Lys Ser Ile Xaa Gln Pro His Pro Gly  
 325 330 335

Gln Gly Arg Ile Trp Asn Gly Arg Val Trp Leu Gln Leu Ser Gly His  
 340 345 350

Pro Pro Gln Gly Leu Glu Thr Asp Asp Gly Pro Leu Gly Gly Phe Leu  
 355 360 365

Pro Arg Ala Val Phe His Tyr Cys Leu Trp Leu Ser Pro Leu Pro Pro  
 370 375 380

Phe Gln Lys Tyr Ile Thr Val Thr Pro  
 385 390

<210> 23  
 <211> 759  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> variation  
 <222> (1)  
 <223> Wherein n is any nucleic acid as defined in the  
 specification

<400> 23  
 natcagactc tattgaccgc cactctaacg ttgtcaggca ttgtggcaat tgtgtccttg 60  
 tggctttggg catttaagct tcactacttg acctctatag ttttggcatc ttctcataca 120  
 catgactatc agcaagctaa attatttact gactgtcctg ctccccgcac tccgcctttg 180  
 aggcgcggaa cgaagtggca cgcccggatc ccagctgatc agcggctggg ctttggcggt 240  
 ggctcccccg ggagagacca ttgtgactcc tcgggagggg cgcacgcccg ggagggggcg 300  
 gagcggccat tgtccggtca ggcagcctc cgggggaggg gacggtgtta cggagacagc 360  
 agggcccggg gcttcagagc ggccgctgcg actccggagc cggcgggggg ctccggtcct 420  
 tccctgcgcc accgcacagg acatctctct ggctggggag cggcgggtgag acccgccgag 480  
 ggcgtctgtg tccctcctcc cccgcggtcc tcgagcgggg cccgggcccc gccgcccga 540  
 ccgctgccgc cgccgagctc cgccgccgcc gagcaccatg ggagacgctg ggagcgagcg 600

cagcaaagcg cccagcctgc cgctcgctg tccctgcggc ttctggggac taacggcagt 660  
 tccttttagga ttgctgctct ttcgagtgc ttaggctgca ggacttgctg cccagcattg 720  
 cccagtcagg acactaatca gtgtggctcg gttgaatag 759

<210> 24  
 <211> 252  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> VARIANT  
 <222> (1)  
 <223> Wherein Xaa is any amino acid as defined in the  
 specification

<400> 24  
 Xaa Gln Thr Leu Leu Thr Ala Thr Leu Thr Leu Ser Gly Ile Val Ala  
 1 5 10 15  
 Ile Val Ser Leu Trp Leu Trp Ala Phe Lys Leu His Tyr Leu Thr Ser  
 20 25 30  
 Ile Val Leu Ala Ser Ser His Thr His Asp Tyr Gln Gln Ala Lys Leu  
 35 40 45  
 Phe Thr Asp Cys Pro Ala Pro Arg Thr Pro Pro Leu Arg Arg Gly Thr  
 50 55 60  
 Lys Trp His Ala Arg Ile Pro Ala Asp Gln Arg Leu Gly Phe Gly Val  
 65 70 75 80  
 Gly Ser Pro Gly Arg Asp His Cys Asp Ser Ser Gly Gly Ala His Ala  
 85 90 95  
 Gly Glu Gly Ala Glu Arg Pro Leu Ser Gly Gln Arg Ser Leu Arg Gly  
 100 105 110  
 Arg Gly Arg Cys Tyr Gly Asp Ser Arg Ala Arg Gly Phe Arg Ala Ala  
 115 120 125  
 Ala Ala Thr Pro Glu Pro Ala Gly Gly Ser Gly Pro Ser Leu Arg His  
 130 135 140  
 Arg Thr Gly His Leu Ser Gly Trp Gly Ala Ala Val Arg Pro Ala Glu  
 145 150 155 160

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Gly Val Cys Val Pro Pro Pro Pro Arg Ser Ser Ser Gly Ala Arg Ala  
165 170 175

Gln Pro Pro Pro Pro Leu Pro Pro Pro Ser Ser Ala Ala Ala Glu His  
180 185 190

His Gly Arg Arg Trp Glu Arg Ala Gln Gln Ser Ala Gln Pro Ala Ala  
195 200 205

Ser Leu Ser Leu Arg Leu Leu Gly Thr Asn Gly Ser Ser Phe Arg Ile  
210 215 220

Ala Ala Leu Ser Ser Asp Leu Gly Cys Arg Thr Cys Cys Pro Ala Leu  
225 230 235 240

Pro Ser Gln Asp Thr Asn Gln Cys Gly Ser Val Glu  
245 250

<210> 25  
<211> 939  
<212> DNA  
<213> Homo sapiens  
<220>  
<221> CDS  
<222> (1)..(936)

<400> 25  
atg cgg cat ccg ctg gtc ctg ctg ctg ctc ctc tct gcc ctg gtg acc 48  
Met Arg His Pro Leu Val Leu Leu Leu Leu Leu Ser Ala Leu Val Thr  
1 5 10 15  
tcc ttc act gca gcc tct atc cac gat gct cat gcc caa gag agc tcc 96  
Ser Phe Thr Ala Ala Ser Ile His Asp Ala His Ala Gln Glu Ser Ser  
20 25 30  
ttg ggt ctt aca ggc ctc cag agc cta ctc caa ggc ttc agc cga ctt 144  
Leu Gly Leu Thr Gly Leu Gln Ser Leu Leu Gln Gly Phe Ser Arg Leu  
35 40 45  
ttc ctg aaa gat gac ctg ctt cgg ggc ata gac agc ttc ttc tct gcc 192  
Phe Leu Lys Asp Asp Leu Leu Arg Gly Ile Asp Ser Phe Phe Ser Ala  
50 55 60  
ccc atg gac ttc cgg ggc ctc cct agg aac tac caa caa gag gag aac 240  
Pro Met Asp Phe Arg Gly Leu Pro Arg Asn Tyr Gln Gln Glu Glu Asn

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65	70	75	80	
gag gag cac cag ctg agg aac aac acc ctc tcc agc cac ctc cat att				288
Glu Glu His Gln Leu Arg Asn Asn Thr Leu Ser Ser His Leu His Ile				
	85	90	95	
gac aag gtg acc gac aat aag aca gga gag gtg ctg atc tcc gag aag				336
Asp Lys Val Thr Asp Asn Lys Thr Gly Glu Val Leu Ile Ser Glu Lys				
	100	105	110	
gtg gtg gca tcc atc cag ccg gcg gag ggg agc ttc gag ggt aac tgg				384
Val Val Ala Ser Ile Gln Pro Ala Glu Gly Ser Phe Glu Gly Asn Trp				
	115	120	125	
aag gcg gcg gcc ctg gtg tcc atc cgg aag gct atg gac aac ttc cat				432
Lys Ala Ala Ala Leu Val Ser Ile Arg Lys Ala Met Asp Asn Phe His				
	130	135	140	
gca gag ctc cat ccc cgg gtg gcc ttt tgg atc atg aag ctg cca cgg				480
Ala Glu Leu His Pro Arg Val Ala Phe Trp Ile Met Lys Leu Pro Arg				
	145	150	155	160
tgg agg tcc cac cac aat gtc ctg gag ggc ggc cgc tgg ctc agt gag				528
Trp Arg Ser His His Asn Val Leu Glu Gly Gly Arg Trp Leu Ser Glu				
	165	170	175	
aag cga cac cgc ctg cag gcc atc cag gat ggg ctc cac gag ggg acc				576
Lys Arg His Arg Leu Gln Ala Ile Gln Asp Gly Leu His Glu Gly Thr				
	180	185	190	
cgc gag gac gtc cta aaa gag ggg acc cag ggc tcc tcc cac tcc ggg				624
Arg Glu Asp Val Leu Lys Glu Gly Thr Gln Gly Ser Ser His Ser Gly				
	195	200	205	
ctg tcc tcc gaa aga ccc act tac tgt aca tct tca ggc ttt cct ggc				672
Leu Ser Ser Glu Arg Pro Thr Tyr Cys Thr Ser Ser Gly Phe Pro Gly				
	210	215	220	
agc tat agg ggt tgg gac cgg gga gca cct gca agc tgg gtt ggt gtc				720
Ser Tyr Arg Gly Trp Asp Arg Gly Ala Pro Ala Ser Trp Val Gly Val				
	225	230	235	240
tgg gtc agc gta tca aag ggc ctg gca cat gga ccc aca ggg ttg ggc				768
Trp Val Ser Val Ser Lys Gly Leu Ala His Gly Pro Thr Gly Leu Gly				
	245	250	255	
ctg gag cct gga tcc agt ggg ata gac ttt gtg aat gcg ttc atg gag				816
Leu Glu Pro Gly Ser Ser Gly Ile Asp Phe Val Asn Ala Phe Met Glu				

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10ET20-16494250

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260                265                270
ggc tac agt aac caa aac atc atg gta cta gta caa aaa cgg ata cat      864
Gly Tyr Ser Asn Gln Asn Ile Met Val Leu Val Gln Lys Arg Ile His
      275                280                285

aga cca atg caa cag aac aga gag gcc aga aat aag gcc aca cac cta      912
Arg Pro Met Gln Gln Asn Arg Glu Ala Arg Asn Lys Ala Thr His Leu
      290                295                300

caa cca tct gat ctt cga caa agc tga                                  939
Gln Pro Ser Asp Leu Arg Gln Ser
305                310

<210> 26
<211> 312
<212> PRT
<213> Homo sapiens

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Met Arg His Pro Leu Val Leu Leu Leu Leu Leu Ser Ala Leu Val Thr
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Ser Phe Thr Ala Ala Ser Ile His Asp Ala His Ala Gln Glu Ser Ser
      20                25                30

Leu Gly Leu Thr Gly Leu Gln Ser Leu Leu Gln Gly Phe Ser Arg Leu
      35                40                45

Phe Leu Lys Asp Asp Leu Leu Arg Gly Ile Asp Ser Phe Phe Ser Ala
      50                55                60

Pro Met Asp Phe Arg Gly Leu Pro Arg Asn Tyr Gln Gln Glu Glu Asn
      65                70                75                80

Glu Glu His Gln Leu Arg Asn Asn Thr Leu Ser Ser His Leu His Ile
      85                90                95

Asp Lys Val Thr Asp Asn Lys Thr Gly Glu Val Leu Ile Ser Glu Lys
      100                105                110

Val Val Ala Ser Ile Gln Pro Ala Glu Gly Ser Phe Glu Gly Asn Trp
      115                120                125

Lys Ala Ala Ala Leu Val Ser Ile Arg Lys Ala Met Asp Asn Phe His
      130                135                140
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Ala Glu Leu His Pro Arg Val Ala Phe Trp Ile Met Lys Leu Pro Arg  
145 150 155 160

Trp Arg Ser His His Asn Val Leu Glu Gly Gly Arg Trp Leu Ser Glu  
165 170 175

Lys Arg His Arg Leu Gln Ala Ile Gln Asp Gly Leu His Glu Gly Thr  
180 185 190

Arg Glu Asp Val Leu Lys Glu Gly Thr Gln Gly Ser Ser His Ser Gly  
195 200 205

Leu Ser Ser Glu Arg Pro Thr Tyr Cys Thr Ser Ser Gly Phe Pro Gly  
210 215 220

Ser Tyr Arg Gly Trp Asp Arg Gly Ala Pro Ala Ser Trp Val Gly Val  
225 230 235 240

Trp Val Ser Val Ser Lys Gly Leu Ala His Gly Pro Thr Gly Leu Gly  
245 250 255

Leu Glu Pro Gly Ser Ser Gly Ile Asp Phe Val Asn Ala Phe Met Glu  
260 265 270

Gly Tyr Ser Asn Gln Asn Ile Met Val Leu Val Gln Lys Arg Ile His  
275 280 285

Arg Pro Met Gln Gln Asn Arg Glu Ala Arg Asn Lys Ala Thr His Leu  
290 295 300

Gln Pro Ser Asp Leu Arg Gln Ser  
305 310

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<220>  
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<222> (1)..(1362)

<400> 27  
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1 5 10 15

cga gct gac cct ggg gca ctg ctg cgg ttg ggc atg gac atc atg aac	96
Arg Ala Asp Pro Gly Ala Leu Leu Arg Leu Gly Met Asp Ile Met Asn	
20 25 30	
cgT gag gtc cag agc gcc atg gat gag agt cat atc ctg gag aag atg	144
Arg Glu Val Gln Ser Ala Met Asp Glu Ser His Ile Leu Glu Lys Met	
35 40 45	
gca gcc gag gca ggc aag aaa cag cca ggg atg aaa cct atc aag ggc	192
Ala Ala Glu Ala Gly Lys Lys Gln Pro Gly Met Lys Pro Ile Lys Gly	
50 55 60	
atc acc aat ttg aag gtg aag gat gtc cag ctg ccc gtc atc aca ctg	240
Ile Thr Asn Leu Lys Val Lys Asp Val Gln Leu Pro Val Ile Thr Leu	
65 70 75 80	
aac ttt gta cct gga gtg ggc atc ttc caa tgt gtg tcc aca ggc atg	288
Asn Phe Val Pro Gly Val Gly Ile Phe Gln Cys Val Ser Thr Gly Met	
85 90 95	
acc gtc act ggc aag agc ttc atg gga ggg aac atg gag atc atc gtg	336
Thr Val Thr Gly Lys Ser Phe Met Gly Gly Asn Met Glu Ile Ile Val	
100 105 110	
gcc ctg aac atc aca gcc acc aac cgg ctt ctg cgg gat gag gag aca	384
Ala Leu Asn Ile Thr Ala Thr Asn Arg Leu Leu Arg Asp Glu Glu Thr	
115 120 125	
ggc ctc ccc gtg ttc aag agt gag ggc tgt gag gtc atc ctg gtc aat	432
Gly Leu Pro Val Phe Lys Ser Glu Gly Cys Glu Val Ile Leu Val Asn	
130 135 140	
gtg aag act aac ctg cct agc aac atg ctc ccc aag atg gtc aac aag	480
Val Lys Thr Asn Leu Pro Ser Asn Met Leu Pro Lys Met Val Asn Lys	
145 150 155 160	
ttc ctg gac agc acc ctg cac aaa gtc ctc cct ggg ctg atg tgt ccc	528
Phe Leu Asp Ser Thr Leu His Lys Val Leu Pro Gly Leu Met Cys Pro	
165 170 175	
gcc atc gat gca gtc ctg gtg tat gtg aac agg aag tgg acc aac ctc	576
Ala Ile Asp Ala Val Leu Val Tyr Val Asn Arg Lys Trp Thr Asn Leu	
180 185 190	
agt gac ccc atg cct gtg ggc cag atg ggc acc gtc aaa tat gtt ctg	624
Ser Asp Pro Met Pro Val Gly Gln Met Gly Thr Val Lys Tyr Val Leu	
195 200 205	

atg tcc gca cca gcc acc aca gcc agc tac atc caa ctg gac ttc agt	672
Met Ser Ala Pro Ala Thr Thr Ala Ser Tyr Ile Gln Leu Asp Phe Ser	
210 215 220	
cct gtg gtg cag cag caa aag ggc aaa acc atc aag ctt gct gat gcc	720
Pro Val Val Gln Gln Gln Lys Gly Lys Thr Ile Lys Leu Ala Asp Ala	
225 230 235 240	
ggg gag gcc ctc acg ttc cct gag ggt tat gcc aaa ggc tcg tcg cag	768
Gly Glu Ala Leu Thr Phe Pro Glu Gly Tyr Ala Lys Gly Ser Ser Gln	
245 250 255	
ctg ctg ctc cca gcc acc ttc ctc tct gca gag ctt gcc ctt ctg cag	816
Leu Leu Leu Pro Ala Thr Phe Leu Ser Ala Glu Leu Ala Leu Leu Gln	
260 265 270	
aag tcc ttt cat gtg aat atc cag gat aca atg att ggt gag ctg ccc	864
Lys Ser Phe His Val Asn Ile Gln Asp Thr Met Ile Gly Glu Leu Pro	
275 280 285	
cca caa acc acc aag acc ctg gct cgc ttc att cct gaa gtg gct gta	912
Pro Gln Thr Thr Lys Thr Leu Ala Arg Phe Ile Pro Glu Val Ala Val	
290 295 300	
gct tat ccc aag tca aag ccc ttg acg acc cag atc aag ata aag aag	960
Ala Tyr Pro Lys Ser Lys Pro Leu Thr Thr Gln Ile Lys Ile Lys Lys	
305 310 315 320	
cct ccc aag gtc act atg aag aca ggc aag agc ctg ctg cac ctc cac	1008
Pro Pro Lys Val Thr Met Lys Thr Gly Lys Ser Leu Leu His Leu His	
325 330 335	
agc acc ctg gag atg ttc gca gct cgg tgg cgg agc aag gct cca atg	1056
Ser Thr Leu Glu Met Phe Ala Ala Arg Trp Arg Ser Lys Ala Pro Met	
340 345 350	
tcc ctc ttt ctc cta gaa gtg cac ttc aat ctg aag gtc cag tac tca	1104
Ser Leu Phe Leu Leu Glu Val His Phe Asn Leu Lys Val Gln Tyr Ser	
355 360 365	
gtg cat gag aac cag ctg cag atg gcc act tct ttg gac aga tta ctg	1152
Val His Glu Asn Gln Leu Gln Met Ala Thr Ser Leu Asp Arg Leu Leu	
370 375 380	
agc ttg tcc cgg aag tcc tca tcg att ggc aac ttc aat gag agg gaa	1200
Ser Leu Ser Arg Lys Ser Ser Ser Ile Gly Asn Phe Asn Glu Arg Glu	
385 390 395 400	

tta act ggc ttc atc acc agc tat ctc gaa gaa gcc tac atc cca gtt 1248  
 Leu Thr Gly Phe Ile Thr Ser Tyr Leu Glu Glu Ala Tyr Ile Pro Val  
                   405                  410                  415

gtc aat gat gtg ctt caa gtg ggg ctc cca ctc ccg gac ttt ctg gcc 1296  
 Val Asn Asp Val Leu Gln Val Gly Leu Pro Leu Pro Asp Phe Leu Ala  
                   420                  425                  430

atg aat tac aac ctg gct gag ctg gac ata gta gag ctt ggg ggc atc 1344  
 Met Asn Tyr Asn Leu Ala Glu Leu Asp Ile Val Glu Leu Gly Gly Ile  
                   435                  440                  445

atg gaa cct gcc gac ata tga 1365  
 Met Glu Pro Ala Asp Ile  
                   450

<210> 28  
 <211> 454  
 <212> PRT  
 <213> Homo sapiens

<400> 28  
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Arg Ala Asp Pro Gly Ala Leu Leu Arg Leu Gly Met Asp Ile Met Asn  
                   20                  25                  30

Arg Glu Val Gln Ser Ala Met Asp Glu Ser His Ile Leu Glu Lys Met  
                   35                  40                  45

Ala Ala Glu Ala Gly Lys Lys Gln Pro Gly Met Lys Pro Ile Lys Gly  
                   50                  55                  60

Ile Thr Asn Leu Lys Val Lys Asp Val Gln Leu Pro Val Ile Thr Leu  
       65                  70                  75                  80

Asn Phe Val Pro Gly Val Gly Ile Phe Gln Cys Val Ser Thr Gly Met  
                   85                  90                  95

Thr Val Thr Gly Lys Ser Phe Met Gly Gly Asn Met Glu Ile Ile Val  
                   100                  105                  110

Ala Leu Asn Ile Thr Ala Thr Asn Arg Leu Leu Arg Asp Glu Glu Thr  
                   115                  120                  125

Gly Leu Pro Val Phe Lys Ser Glu Gly Cys Glu Val Ile Leu Val Asn

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130	135	140
Val Lys Thr Asn Leu Pro Ser Asn Met Leu Pro Lys Met Val Asn Lys		
145	150	155 160
Phe Leu Asp Ser Thr Leu His Lys Val Leu Pro Gly Leu Met Cys Pro		
	165	170 175
Ala Ile Asp Ala Val Leu Val Tyr Val Asn Arg Lys Trp Thr Asn Leu		
	180	185 190
Ser Asp Pro Met Pro Val Gly Gln Met Gly Thr Val Lys Tyr Val Leu		
	195	200 205
Met Ser Ala Pro Ala Thr Thr Ala Ser Tyr Ile Gln Leu Asp Phe Ser		
	210	215 220
Pro Val Val Gln Gln Gln Lys Gly Lys Thr Ile Lys Leu Ala Asp Ala		
225	230	235 240
Gly Glu Ala Leu Thr Phe Pro Glu Gly Tyr Ala Lys Gly Ser Ser Gln		
	245	250 255
Leu Leu Leu Pro Ala Thr Phe Leu Ser Ala Glu Leu Ala Leu Leu Gln		
	260	265 270
Lys Ser Phe His Val Asn Ile Gln Asp Thr Met Ile Gly Glu Leu Pro		
	275	280 285
Pro Gln Thr Thr Lys Thr Leu Ala Arg Phe Ile Pro Glu Val Ala Val		
	290	295 300
Ala Tyr Pro Lys Ser Lys Pro Leu Thr Thr Gln Ile Lys Ile Lys Lys		
305	310	315 320
Pro Pro Lys Val Thr Met Lys Thr Gly Lys Ser Leu Leu His Leu His		
	325	330 335
Ser Thr Leu Glu Met Phe Ala Ala Arg Trp Arg Ser Lys Ala Pro Met		
	340	345 350
Ser Leu Phe Leu Leu Glu Val His Phe Asn Leu Lys Val Gln Tyr Ser		
	355	360 365
Val His Glu Asn Gln Leu Gln Met Ala Thr Ser Leu Asp Arg Leu Leu		
	370	375 380
Ser Leu Ser Arg Lys Ser Ser Ser Ile Gly Asn Phe Asn Glu Arg Glu		

385                      390                      395                      400

Leu Thr Gly Phe Ile Thr Ser Tyr Leu Glu Glu Ala Tyr Ile Pro Val  
                          405                      410                      415

Val Asn Asp Val Leu Gln Val Gly Leu Pro Leu Pro Asp Phe Leu Ala  
                          420                      425                      430

Met Asn Tyr Asn Leu Ala Glu Leu Asp Ile Val Glu Leu Gly Gly Ile  
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Met Glu Pro Ala Asp Ile  
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 <212> DNA  
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   1                          5                          10                          15

agc tcc tcg tgg tct ttg gct ccc aat cca gag ctt tcg cga aca cca 96  
 Ser Ser Ser Trp Ser Leu Ala Pro Asn Pro Glu Leu Ser Arg Thr Pro  
                           20                          25                          30

gag ccc ctg tgc ctc tcc ctg cag ctg gct ggg agt tcc agg gca tta 144  
 Glu Pro Leu Cys Leu Ser Leu Gln Leu Ala Gly Ser Ser Arg Ala Leu  
                           35                          40                          45

aca cag aca gtc ttt gcc cat cag cca gtg act gta tgg agc ttg gat 192  
 Thr Gln Thr Val Phe Ala His Gln Pro Val Thr Val Trp Ser Leu Asp  
                           50                          55                          60

gtg aat aca cag ctc ctg cat ccc tcc gag gca tct cca cac cgt ctc 240  
 Val Asn Thr Gln Leu Leu His Pro Ser Glu Ala Ser Pro His Arg Leu  
   65                          70                          75                          80

cca gag aat gtc tcg taaaagctgc tcctcttggg gaggctctgg gctttggaga 295  
 Pro Glu Asn Val Ser  
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097464910760

gagcacctgg aattccccac tagaaaagcc caaaaactga

335

<210> 30  
<211> 85  
<212> PRT  
<213> Homo sapiens

<400> 30  
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Ser Ser Ser Trp Ser Leu Ala Pro Asn Pro Glu Leu Ser Arg Thr Pro  
20 25 30  
Glu Pro Leu Cys Leu Ser Leu Gln Leu Ala Gly Ser Ser Arg Ala Leu  
35 40 45  
Thr Gln Thr Val Phe Ala His Gln Pro Val Thr Val Trp Ser Leu Asp  
50 55 60  
Val Asn Thr Gln Leu Leu His Pro Ser Glu Ala Ser Pro His Arg Leu  
65 70 75 80  
Pro Glu Asn Val Ser  
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<210> 31  
<211> 23  
<212> DNA  
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<220>  
<223> Description of Artificial Sequence: oligo primer

<400> 31  
ggagaggctc tgaagctaca caa

23

<210> 32  
<211> 22  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: oligo primer

<400> 32  
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<210> 33  
<211> 19  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: oligo primer

<400> 33  
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<210> 34  
<211> 228  
<212> DNA  
<213> Homo sapiens

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gcctttgata tttccagagt caatactgc tttccattct ccacagcatc taatataagt 180  
catggcttct catctgtcct gttccccgc ttcgcgttca ccactgtg 228

<210> 35  
<211> 156  
<212> DNA  
<213> Homo sapiens

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<210> 36  
<211> 1772  
<212> DNA



<213> Homo sapiens

<400> 36

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cgcccgagga gtggccggcc ctggccgaca gcccaccac gtcaccgag gccctgcgga 180  
tgatccaccc cattcccgcc gactcctgga gaaacctcat tgaacaaata gggctcctgt 240  
atcaggaata ccgagataaa tcgactctcc aagaaatcga aaccaggagg caacaggatg 300  
cagaaataga agacaatacc aatgggtccc cggccagtga ggacaccccg gaggaggaag 360  
aagaagagga ggaggaggag gagccggcca gccaccaga gaggaagact ctgccccaga 420  
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ccaacgtcct ggacgtgctg gctgtcagtg agcggttggt cctggagctg gagcaccgga 720  
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<210> 37  
 <211> 511  
 <212> PRT  
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 20 25 30  
 Glu Ser Leu Ser Glu Thr Pro Gly Pro Ser Ser Pro Arg Gln Pro Arg  
 35 40 45  
 Lys Ala Leu Val Ser Ser Glu Ser Tyr Leu Gln Arg Leu Ser Met Ala  
 50 55 60  
 Ser Ser Gly Ser Leu Trp Gln Glu Ile Pro Val Val Arg Asn Ser Thr  
 65 70 75 80  
 Val Leu Leu Ser Met Thr His Glu Asp Gln Lys Leu Gln Glu Val Lys  
 85 90 95  
 Phe Glu Leu Ile Val Ser Glu Ala Ser Tyr Leu Arg Ser Leu Asn Ile  
 100 105 110  
 Ala Val Asp His Phe Gln Leu Ser Thr Ser Leu Arg Ala Thr Leu Ser  
 115 120 125  
 Asn Gln Glu His Gln Trp Leu Phe Ser Arg Leu Gln Asp Val Arg Asp  
 130 135 140

Val Ser Ala Thr Phe Leu Ser Asp Leu Glu Glu Asn Phe Glu Asn Asn  
145 150 155 160

Ile Phe Ser Phe Gln Val Cys Asp Val Val Leu Asn His Ala Pro Asp  
165 170 175

Phe Arg Arg Val Tyr Leu Pro Tyr Val Thr Asn Gln Thr Tyr Gln Glu  
180 185 190

Arg Thr Phe Gln Ser Leu Met Asn Ser Asn Ser Asn Phe Arg Glu Val  
195 200 205

Leu Glu Lys Leu Glu Ser Asp Pro Val Cys Gln Arg Leu Ser Leu Lys  
210 215 220

Ser Phe Leu Ile Leu Pro Phe Gln Arg Ile Thr Arg Leu Lys Leu Leu  
225 230 235 240

Leu Gln Asn Ile Leu Lys Arg Thr Gln Pro Gly Ser Ser Glu Glu Ala  
245 250 255

Glu Ala Thr Lys Ala His His Ala Leu Glu Gln Leu Ile Arg Asp Cys  
260 265 270

Asn Asn Asn Val Gln Ser Met Arg Arg Thr Glu Glu Leu Ile Tyr Leu  
275 280 285

Ser Gln Lys Ile Glu Phe Glu Cys Lys Ile Phe Pro Leu Ile Ser Gln  
290 295 300

Ser Arg Trp Leu Val Lys Ser Gly Glu Leu Thr Ala Leu Glu Phe Ser  
305 310 315 320

Ala Ser Pro Gly Leu Arg Arg Lys Leu Asn Thr Arg Pro Val His Leu  
325 330 335

His Leu Phe Asn Asp Cys Leu Leu Leu Ser Arg Pro Arg Glu Gly Ser  
340 345 350

Arg Phe Leu Val Phe Asp His Ala Pro Phe Ser Ser Ile Arg Gly Glu  
355 360 365

Lys Cys Glu Met Lys Leu His Gly Pro His Lys Asn Leu Phe Arg Leu  
370 375 380

Phe Leu Arg Gln Asn Thr Gln Gly Ala Gln Ala Glu Phe Leu Phe Arg  
385 390 395 400

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Thr Glu Thr Gln Ser Glu Lys Leu Arg Trp Ile Ser Ala Leu Ala Met  
 405 410 415

Pro Arg Glu Glu Leu Asp Leu Leu Glu Cys Tyr Asn Ser Pro Gln Val  
 420 425 430

Gln Cys Leu Arg Ala Tyr Lys Pro Arg Glu Asn Asp Glu Leu Ala Leu  
 435 440 445

Glu Lys Ala Asp Val Val Met Val Thr Gln Gln Ser Ser Asp Gly Trp  
 450 455 460

Leu Glu Gly Val Arg Leu Ser Asp Gly Glu Arg Gly Trp Phe Pro Val  
 465 470 475 480

Gln Gln Val Glu Phe Ile Ser Asn Pro Glu Val Arg Ala Gln Asn Leu  
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Lys Glu Ala His Arg Val Lys Thr Ala Lys Leu Gln Leu Val Glu  
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<210> 38  
 <211> 421  
 <212> PRT  
 <213> Homo sapiens

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Ile Leu Val Glu Glu Phe Leu Gln Ser Lys Glu Leu Arg Ala Thr Val  
 20 25 30

Thr Gln Met Glu His His His Leu Phe Ser Asn Ile Leu Asp Val Leu  
 35 40 45

Gly Ala Ser Gln Arg Phe Phe Glu Asp Leu Glu Gln Arg His Lys Ala  
 50 55 60

Gln Val Leu Val Glu Asp Ile Ser Asp Ile Leu Glu Glu His Ala Glu  
 65 70 75 80

Lys Tyr Phe His Pro Tyr Ile Ala Tyr Cys Ser Asn Glu Val Tyr Gln  
 85 90 95

Gln Arg Thr Leu Gln Lys Leu Ile Ser Ser Asn Ala Ala Phe Arg Glu

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100	105	110
Ala Leu Arg Glu Ile Glu Arg Arg Pro Ala Cys Gly Gly Leu Pro Met		
115	120	125
Leu Ser Phe Leu Ile Leu Pro Met Gln Arg Val Thr Arg Leu Pro Leu		
130	135	140
Leu Met Asp Thr Leu Cys Leu Lys Thr Gln Gly His Ser Glu Arg Tyr		
145	150	155
Lys Ala Ala Ser Arg Ala Leu Lys Ala Ile Ser Lys Leu Val Arg Gln		
165	170	175
Cys Asn Glu Gly Ala His Arg Met Glu Arg Met Glu Gln Met Tyr Thr		
180	185	190
Leu His Thr Gln Leu Asp Phe Ser Lys Val Lys Ser Leu Pro Leu Ile		
195	200	205
Ser Ala Ser Arg Trp Leu Leu Lys Arg Gly Glu Leu Phe Leu Val Glu		
210	215	220
Glu Thr Gly Leu Phe Arg Lys Ile Ala Ser Arg Pro Thr Cys Tyr Leu		
225	230	235
Phe Leu Phe Asn Asp Val Leu Val Val Thr Lys Lys Lys Ser Glu Glu		
245	250	255
Ser Tyr Met Val Gln Asp Tyr Ala Gln Met Asn His Ile Gln Val Glu		
260	265	270
Lys Ile Glu Pro Ser Glu Leu Pro Leu Pro Gly Gly Gly Asn Arg Ser		
275	280	285
Ser Ser Val Pro His Pro Phe Gln Val Thr Leu Leu Arg Asn Ser Glu		
290	295	300
Gly Arg Gln Glu Gln Leu Leu Leu Ser Ser Asp Ser Ala Ser Asp Arg		
305	310	315
Ala Arg Trp Ile Val Ala Leu Thr His Ser Glu Arg Gln Trp Gln Gly		
325	330	335
Leu Ser Ser Lys Gly Asp Leu Pro Gln Val Glu Ile Thr Lys Ala Phe		
340	345	350
Phe Ala Lys Gln Ala Asp Glu Val Thr Leu Gln Gln Ala Asp Val Val		

355

360

365

Leu Val Leu Gln Gln Glu Asp Gly Trp Leu Tyr Gly Glu Arg Leu Arg  
 370 375 380

Asp Gly Glu Thr Gly Trp Phe Pro Glu Asp Phe Ala Arg Phe Ile Thr  
 385 390 395 400

Ser Arg Val Ala Val Glu Gly Asn Val Arg Arg Met Glu Arg Leu Arg  
 405 410 415

Val Glu Thr Asp Val  
 420

<210> 39  
 <211> 550  
 <212> PRT  
 <213> Homo sapiens

<400> 39  
 Glu Gly Ser Ser Asp Ser Arg Gly Pro Ala Val Glu Lys His Pro Gly  
 1 5 10 15

Pro Ser Asp Thr Val Val Phe Arg Glu Lys Lys Pro Lys Glu Val Met  
 20 25 30

Gly Gly Phe Ser Arg Arg Cys Ser Lys Leu Ile Asn Ser Ser Gln Leu  
 35 40 45

Leu Tyr Gln Glu Tyr Ser Asp Val Val Leu Asn Lys Glu Ile Gln Ser  
 50 55 60

Gln Gln Arg Leu Glu Ser Leu Ser Glu Thr Pro Gly Pro Ser Ser Pro  
 65 70 75 80

Arg Gln Pro Arg Lys Ala Leu Val Ser Ser Glu Ser Tyr Leu Gln Arg  
 85 90 95

Leu Ser Met Ala Ser Ser Gly Ser Leu Trp Gln Glu Ile Pro Val Val  
 100 105 110

Arg Asn Ser Thr Val Leu Leu Ser Met Thr His Glu Asp Gln Lys Leu  
 115 120 125

Gln Glu Val Lys Phe Glu Leu Ile Val Ser Glu Ala Ser Tyr Leu Arg  
 130 135 140

Ser	Leu	Asn	Ile	Ala	Val	Asp	His	Phe	Gln	Leu	Ser	Thr	Ser	Leu	Arg	145	150	155	160
Ala	Thr	Leu	Ser	Asn	Gln	Glu	His	Gln	Trp	Leu	Phe	Ser	Arg	Leu	Gln	165	170	175	
Asp	Val	Arg	Asp	Val	Ser	Ala	Thr	Phe	Leu	Ser	Asp	Leu	Glu	Glu	Asn	180	185	190	
Phe	Glu	Asn	Asn	Ile	Phe	Ser	Phe	Gln	Val	Cys	Asp	Val	Val	Leu	Asn	195	200	205	
His	Ala	Pro	Asp	Phe	Arg	Arg	Val	Tyr	Leu	Pro	Tyr	Val	Thr	Asn	Gln	210	215	220	
Thr	Tyr	Gln	Glu	Arg	Thr	Phe	Gln	Ser	Leu	Met	Asn	Ser	Asn	Ser	Asn	225	230	235	240
Phe	Arg	Glu	Val	Leu	Glu	Lys	Leu	Glu	Ser	Asp	Pro	Val	Cys	Gln	Arg	245	250	255	
Leu	Ser	Leu	Lys	Ser	Phe	Leu	Ile	Leu	Pro	Phe	Gln	Arg	Ile	Thr	Arg	260	265	270	
Leu	Lys	Leu	Leu	Leu	Gln	Asn	Ile	Leu	Lys	Arg	Thr	Gln	Pro	Gly	Ser	275	280	285	
Ser	Glu	Glu	Ala	Glu	Ala	Thr	Lys	Ala	His	His	Ala	Leu	Glu	Gln	Leu	290	295	300	
Ile	Arg	Asp	Cys	Asn	Asn	Asn	Val	Gln	Ser	Met	Arg	Arg	Thr	Glu	Glu	305	310	315	320
Leu	Ile	Tyr	Leu	Ser	Gln	Lys	Ile	Glu	Phe	Glu	Cys	Lys	Ile	Phe	Pro	325	330	335	
Leu	Ile	Ser	Gln	Ser	Arg	Trp	Leu	Val	Lys	Ser	Gly	Glu	Leu	Thr	Ala	340	345	350	
Leu	Glu	Phe	Ser	Ala	Ser	Pro	Gly	Leu	Arg	Arg	Lys	Leu	Asn	Thr	Arg	355	360	365	
Pro	Val	His	Leu	His	Leu	Phe	Asn	Asp	Cys	Leu	Leu	Leu	Ser	Arg	Pro	370	375	380	
Arg	Glu	Gly	Ser	Arg	Phe	Leu	Val	Phe	Asp	His	Ala	Pro	Phe	Ser	Ser	385	390	395	400

Ile Arg Gly Glu Lys Cys Glu Met Lys Leu His Gly Pro His Lys Asn  
 405 410 415

Leu Phe Arg Leu Phe Leu Arg Gln Asn Thr Gln Gly Ala Gln Ala Glu  
 420 425 430

Phe Leu Phe Arg Thr Glu Thr Gln Ser Glu Lys Leu Arg Trp Ile Ser  
 435 440 445

Ala Leu Ala Met Pro Arg Glu Glu Leu Asp Leu Leu Glu Cys Tyr Asn  
 450 455 460

Ser Pro Gln Val Gln Cys Leu Arg Ala Tyr Lys Pro Arg Glu Asn Asp  
 465 470 475 480

Glu Leu Ala Leu Glu Lys Ala Asp Val Val Met Val Thr Gln Gln Ser  
 485 490 495

Ser Asp Gly Trp Leu Glu Gly Val Arg Leu Ser Asp Gly Glu Arg Gly  
 500 505 510

Trp Phe Pro Val Gln Gln Val Glu Phe Ile Ser Asn Pro Glu Val Arg  
 515 520 525

Ala Gln Asn Leu Lys Glu Ala His Arg Val Lys Thr Ala Lys Leu Gln  
 530 535 540

Leu Val Glu Gln Gln Ala  
 545 550

<210> 40  
 <211> 519  
 <212> PRT  
 <213> Homo sapiens

<400> 40  
 Met Gly Gly Phe Ser Arg Arg Cys Ser Lys Leu Ile Asn Ser Ser Gln  
 1 5 10 15

Leu Leu Tyr Gln Glu Tyr Ser Asp Val Val Leu Asn Lys Glu Ile Gln  
 20 25 30

Ser Gln Gln Arg Leu Glu Ser Leu Ser Glu Thr Pro Gly Pro Ser Ser  
 35 40 45

Pro Arg Gln Pro Arg Lys Ala Leu Val Ser Ser Glu Ser Tyr Leu Gln  
 50 55 60

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Arg Leu Ser Met Ala Ser Ser Gly Ser Leu Trp Gln Glu Ile Pro Val  
65 70 75 80

Val Arg Asn Ser Thr Val Leu Leu Ser Met Thr His Glu Asp Gln Lys  
85 90 95

Leu Gln Glu Val Lys Phe Glu Leu Ile Val Ser Glu Ala Ser Tyr Leu  
100 105 110

Arg Ser Leu Asn Ile Ala Val Asp His Phe Gln Leu Ser Thr Ser Leu  
115 120 125

Arg Ala Thr Leu Ser Asn Gln Glu His Gln Trp Leu Phe Ser Arg Leu  
130 135 140

Gln Asp Val Arg Asp Val Ser Ala Thr Phe Leu Ser Asp Leu Glu Glu  
145 150 155 160

Asn Phe Glu Asn Asn Ile Phe Ser Phe Gln Val Cys Asp Val Val Leu  
165 170 175

Asn His Ala Pro Asp Phe Arg Arg Val Tyr Leu Pro Tyr Val Thr Asn  
180 185 190

Gln Thr Tyr Gln Glu Arg Thr Phe Gln Ser Leu Met Asn Ser Asn Ser  
195 200 205

Asn Phe Arg Glu Val Leu Glu Lys Leu Glu Ser Asp Pro Val Cys Gln  
210 215 220

Arg Leu Ser Leu Lys Ser Phe Leu Ile Leu Pro Phe Gln Arg Ile Thr  
225 230 235 240

Arg Leu Lys Leu Leu Leu Gln Asn Ile Leu Lys Arg Thr Gln Pro Gly  
245 250 255

Ser Ser Glu Glu Ala Glu Ala Thr Lys Ala His His Ala Leu Glu Gln  
260 265 270

Leu Ile Arg Asp Cys Asn Asn Asn Val Gln Ser Met Arg Arg Thr Glu  
275 280 285

Glu Leu Ile Tyr Leu Ser Gln Lys Ile Glu Phe Glu Cys Lys Ile Phe  
290 295 300

Pro Leu Ile Ser Gln Ser Arg Trp Leu Val Lys Ser Gly Glu Leu Thr  
305 310 315 320

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Ala Leu Glu Phe Ser Ala Ser Pro Gly Leu Arg Arg Lys Leu Asn Thr  
 325 330 335

Arg Pro Val His Leu His Leu Phe Asn Asp Cys Leu Leu Leu Ser Arg  
 340 345 350

Pro Arg Glu Gly Ser Arg Phe Leu Val Phe Asp His Ala Pro Phe Ser  
 355 360 365

Ser Ile Arg Gly Glu Lys Cys Glu Met Lys Leu His Gly Pro His Lys  
 370 375 380

Asn Leu Phe Arg Leu Phe Leu Arg Gln Asn Thr Gln Gly Ala Gln Ala  
 385 390 395 400

Glu Phe Leu Phe Arg Thr Glu Thr Gln Ser Glu Lys Leu Arg Trp Ile  
 405 410 415

Ser Ala Leu Ala Met Pro Arg Glu Glu Leu Asp Leu Leu Glu Cys Tyr  
 420 425 430

Asn Ser Pro Gln Val Gln Cys Leu Arg Ala Tyr Lys Pro Arg Glu Asn  
 435 440 445

Asp Glu Leu Ala Leu Glu Lys Ala Asp Val Val Met Val Thr Gln Gln  
 450 455 460

Ser Ser Asp Gly Trp Leu Glu Gly Val Arg Leu Ser Asp Gly Glu Arg  
 465 470 475 480

Gly Trp Phe Pro Val Gln Gln Val Glu Phe Ile Ser Asn Pro Glu Val  
 485 490 495

Arg Ala Gln Asn Leu Lys Glu Ala His Arg Val Lys Thr Ala Lys Leu  
 500 505 510

Gln Leu Val Glu Gln Gln Ala  
 515

<210> 41  
 <211> 554  
 <212> PRT  
 <213> Mus musculus

<400> 41  
 Met Ile His Pro Ile Pro Ala Asp Ser Trp Arg Asn Leu Ile Glu Gln

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1	5	10	15
Ile Gly Leu Leu Tyr Gln Glu Tyr Arg Asp Lys Ser Thr Leu Gln Glu	20	25	30
Ile Glu Thr Arg Arg Gln Gln Asp Ala Glu Ile Gln Gly Asn Ser Asp	35	40	45
Gly Ser Gln Val Gly Glu Asp Ala Gly Glu Glu Glu Glu Glu Glu Glu	50	55	60
Glu Gly Glu Glu Glu Glu Leu Ala Ser Pro Pro Glu Arg Arg Ala Leu	65	70	75
Pro Gln Ile Cys Leu Leu Ser Asn Pro His Ser Arg Phe Asn Leu Trp	85	90	95
Gln Asp Leu Pro Glu Ile Gln Ser Ser Gly Val Leu Asp Ile Leu Gln	100	105	110
Pro Glu Glu Ile Arg Leu Gln Glu Ala Met Phe Glu Leu Val Thr Ser	115	120	125
Glu Ala Ser Tyr Tyr Lys Ser Leu Asn Leu Leu Val Ser His Phe Met	130	135	140
Glu Asn Glu Arg Leu Lys Lys Ile Leu His Pro Ser Glu Ala His Ile	145	150	155
Leu Phe Ser Asn Val Leu Asp Val Met Ala Val Ser Glu Arg Phe Leu	165	170	175
Leu Glu Leu Glu His Arg Met Glu Glu Asn Ile Val Ile Ser Asp Val	180	185	190
Cys Asp Ile Val Tyr Arg Tyr Ala Ala Asp His Phe Ser Val Tyr Ile	195	200	205
Thr Tyr Val Ser Asn Gln Thr Tyr Gln Glu Arg Thr Tyr Lys Gln Leu	210	215	220
Leu Gln Glu Lys Ala Ala Phe Arg Glu Leu Ile Ala Gln Leu Glu Leu	225	230	235
Asp Pro Lys Cys Lys Gly Leu Pro Phe Ser Ser Phe Leu Ile Leu Pro	245	250	255
Phe Gln Arg Ile Thr Arg Leu Lys Leu Leu Val Gln Asn Ile Leu Lys			

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Arg Val Glu Glu Arg Ser Glu Arg Glu Gly Thr Ala Leu Asp Ala His	260	265	270
275	280	285	
Lys Glu Leu Glu Met Val Val Lys Ala Cys Asn Glu Gly Val Arg Lys	290	295	300
Met Ser Arg Thr Glu Gln Met Ile Ser Ile Gln Lys Lys Met Glu Phe	305	310	315
320			
Lys Ile Lys Ser Val Pro Ile Ile Ser His Ser Arg Trp Leu Leu Lys	325	330	335
Gln Gly Glu Leu Gln Gln Met Ser Gly Pro Lys Thr Ser Arg Thr Leu	340	345	350
Arg Thr Lys Lys Leu Phe Arg Glu Ile Tyr Leu Phe Leu Phe Asn Asp	355	360	365
Leu Leu Val Ile Cys Arg Gln Ile Pro Gly Asp Lys Tyr Gln Val Phe	370	375	380
Asp Ser Ala Pro Arg Gly Leu Leu Arg Val Glu Glu Leu Glu Asp Gln	385	390	395
400			
Gly Gln Thr Leu Ala Asn Val Phe Ile Leu Arg Leu Leu Glu Asn Ala	405	410	415
Asp Asp Arg Glu Ala Thr Tyr Met Leu Lys Ala Ser Ser Gln Ser Glu	420	425	430
Met Lys Arg Trp Met Thr Ser Leu Ala Pro Asn Arg Arg Thr Lys Phe	435	440	445
Val Ser Phe Thr Ser Arg Leu Leu Asp Cys Pro Gln Val Gln Cys Val	450	455	460
His Pro Tyr Val Ala Gln Gln Pro Asp Glu Leu Thr Leu Glu Leu Ala	465	470	475
480			
Asp Ile Leu Asn Ile Leu Glu Lys Thr Glu Asp Gly Trp Ile Phe Gly	485	490	495
Glu Arg Leu His Asp Gln Glu Arg Gly Trp Phe Pro Ser Ser Met Thr	500	505	510
Glu Glu Ile Leu Asn Pro Lys Ile Arg Ser Gln Asn Leu Lys Glu Cys			

515

520

525

Phe Arg Val His Lys Met Glu Asp Pro Gln Arg Ser Gln Asn Lys Asp  
530 535 540

Arg Arg Lys Leu Gly Ser Arg Asn Arg Gln  
545 550

<210> 42  
<211> 381  
<212> DNA  
<213> Homo sapiens

<400> 42  
tcccaagtat gaactgatca tcgaggctca agatatggct ggactggatg ttggattaac 60  
aggcacggcc acagccacga tcatgatcga tgacaaaaat gatcactcac caaaattcac 120  
caagaaagag tttcaagcca cagtcgagga aggagctgtg ggagttattg tcaatttgac 180  
agttgaagat aaggatgacc ccaccacagg tgcattggagg gctgcctaca ccatcatcaa 240  
cggaaacccc gggcagagct ttgaaatcca caccaaccct caaaccaacg aagggatgct 300  
ttctgttgtc aaaccattgg actatgaaat ttctgccttc cacaccctgc tgatcaaagt 360  
ggaaaatgaa gaccactcg t 381

<210> 43  
<211> 413  
<212> PRT  
<213> Homo sapiens

<400> 43  
Gly Asn Gln Val Glu Asn Pro Ile Asp Ile Val Ile Asn Val Ile Asp  
1 5 10 15  
Met Asn Asp Asn Arg Pro Glu Phe Leu His Gln Val Trp Asn Gly Thr  
20 25 30  
Val Pro Glu Gly Ser Lys Pro Gly Thr Tyr Val Met Thr Val Thr Ala  
35 40 45  
Ile Asp Ala Asp Asp Pro Asn Ala Leu Asn Gly Met Leu Arg Tyr Arg  
50 55 60

Ile Val Ser Gln Ala Pro Ser Thr Pro Ser Pro Asn Met Phe Thr Ile  
65 70 75 80

Asn Asn Glu Thr Gly Asp Ile Ile Thr Val Ala Ala Gly Leu Asp Arg  
85 90 95

Glu Lys Val Gln Gln Tyr Thr Leu Ile Ile Gln Ala Thr Asp Met Glu  
100 105 110

Gly Asn Pro Thr Tyr Gly Leu Ser Asn Thr Ala Thr Ala Val Ile Thr  
115 120 125

Val Thr Asp Val Asn Asp Asn Pro Pro Glu Phe Thr Ala Met Thr Phe  
130 135 140

Tyr Gly Glu Val Pro Glu Asn Arg Val Asp Ile Ile Val Ala Asn Leu  
145 150 155 160

Thr Val Thr Asp Lys Asp Gln Pro His Thr Pro Ala Trp Asn Ala Val  
165 170 175

Tyr Arg Ile Ser Gly Gly Asp Pro Thr Gly Arg Phe Ala Ile Gln Thr  
180 185 190

Asp Pro Asn Ser Asn Asp Gly Leu Val Thr Val Val Lys Pro Ile Asp  
195 200 205

Phe Glu Thr Asn Arg Met Phe Val Leu Thr Val Ala Ala Glu Asn Gln  
210 215 220

Val Pro Leu Ala Lys Gly Ile Gln His Pro Pro Gln Ser Thr Ala Thr  
225 230 235 240

Val Ser Val Thr Val Ile Asp Val Asn Glu Asn Pro Tyr Phe Ala Pro  
245 250 255

Asn Pro Lys Ile Ile Arg Gln Glu Glu Gly Leu His Ala Gly Thr Met  
260 265 270

Leu Thr Thr Phe Thr Ala Gln Asp Pro Asp Arg Tyr Met Gln Gln Asn  
275 280 285

Ile Arg Tyr Thr Lys Leu Ser Asp Pro Ala Asn Trp Leu Lys Ile Asp  
290 295 300

Pro Val Asn Gly Gln Ile Thr Thr Ile Ala Val Leu Asp Arg Glu Ser  
305 310 315 320

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Pro Asn Val Lys Asn Asn Ile Tyr Asn Ala Thr Phe Leu Ala Ser Asp  
 325 330 335

Asn Gly Ile Pro Pro Met Ser Gly Thr Gly Thr Leu Gln Ile Tyr Leu  
 340 345 350

Leu Asp Ile Asn Asp Asn Ala Pro Gln Val Leu Pro Gln Glu Ala Glu  
 355 360 365

Thr Cys Glu Thr Pro Asp Pro Asn Ser Ile Asn Ile Thr Ala Leu Asp  
 370 375 380

Tyr Asp Ile Asp Pro Asn Ala Gly Pro Phe Ala Phe Asp Leu Pro Leu  
 385 390 395 400

Ser Pro Val Thr Ile Lys Arg Asn Trp Thr Ile Thr Arg  
 405 410

<210> 44  
 <211> 80  
 <212> PRT  
 <213> Homo sapiens

<400> 44  
 Leu Gln Arg Gln Lys Arg Asp Trp Val Ile Pro Pro Ile Asn Leu Pro  
 1 5 10 15

Glu Asn Ser Arg Gly Pro Phe Pro Gln Glu Leu Val Arg Ile Arg Ser  
 20 25 30

Asp Arg Asp Lys Asn Leu Ser Leu Arg Tyr Ser Val Thr Gly Pro Gly  
 35 40 45

Ala Asp Gln Pro Pro Thr Gly Ile Phe Ile Ile Asn Pro Ile Ser Gly  
 50 55 60

Gln Leu Ser Val Thr Lys Pro Leu Asp Arg Glu Gln Ile Ala Arg Phe  
 65 70 75 80

<210> 45  
 <211> 905  
 <212> DNA  
 <213> Homo sapiens

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<220>

<221> misc\_feature

<222> (92)

<223> Wherein N may be a or t or g or c

<400> 45

ccaggcctgg gaccctgttg ggaactttta atgccatgga tccagacagc cagataagat 60  
atgaactggt tcatgaccca gcaaattggg tnagcgtcga caaaaactcc ggagtgggtca 120  
tcaccggtga gccaatgac cgagaatccc ctcatgtaaa taacagtttt tatgtaatca 180  
tcattcacgc tgttgatgat ggcttcccac cgcagactgc tacagggacc ctaatgctct 240  
tctgtctga catcaatgac aacgtcccga ctctccggcc acgttcccgc tacatggagg 300  
tctgtgagtc tgctgtgcat gagcccctcc acatcgaggc agaggatccg gacctggagc 360  
cgttctctga ccattttaca tttgaattgg acaatactg gggaaatgcg gaggacacat 420  
ggaagttggg gagaaattgg ggtcaatcag ttgaactttt aaccttgaga agcctgccac 480  
gtggtaatta cttggtgcca ctcttcattg gagacaaaca gggactttcc cagaagcaaa 540  
ctgtccatgt aaggatctgc ccctgtgcca gtgggctcac atgtgtggag cttgcagatg 600  
cagaagtggg gcttcatgtg ggggccctgt tcctgtctg tgcagcattt gtggctctgg 660  
cagtggctct gctttttctg ttgcgatgct attttgtgct tgaacctaaag aggcattggat 720  
gctctgtatc caatgatgaa ggccaccaa cactggtcat gtataatgcg gagagcaaag 780  
gcacttcagc ccagacatgg tcagatgttg aaggccagag gccggctctg ctcatctgca 840  
cagctgcagc aggaccacg caggaggtta aggcttacc agatgccaca atgcacagac 900  
aactc 905

<210> 46

<211> 906

<212> PRT

<213> Homo sapiens

<400> 46

Met Cys Arg Ile Ala Gly Ala Leu Arg Thr Leu Leu Pro Leu Leu Leu

1

5

10

15



Ala Leu Leu Gln Ala Ser Val Glu Ala Ser Gly Glu Ile Ala Leu Cys  
20 25 30

Lys Thr Gly Phe Pro Glu Asp Val Tyr Ser Ala Val Leu Ser Lys Asp  
35 40 45

Val His Glu Gly Gln Pro Leu Leu Asn Val Lys Phe Ser Asn Cys Asn  
50 55 60

Gly Lys Arg Lys Val Gln Tyr Glu Ser Ser Glu Pro Ala Asp Phe Lys  
65 70 75 80

Val Asp Glu Asp Gly Met Val Tyr Ala Val Arg Ser Phe Pro Leu Ser  
85 90 95

Ser Glu His Ala Lys Phe Leu Ile Val Ala Gln Asp Lys Glu Thr Gln  
100 105 110

Glu Lys Trp Gln Val Ala Val Lys Leu Ser Leu Lys Pro Thr Leu Thr  
115 120 125

Glu Glu Ser Val Lys Glu Ser Ala Glu Val Glu Glu Ile Val Phe Pro  
130 135 140

Arg Gln Phe Ser Lys His Ser Gly His Leu Gln Arg Gln Lys Arg Asp  
145 150 155 160

Trp Val Ile Pro Pro Ile Asn Leu Pro Glu Asn Ser Arg Gly Pro Phe  
165 170 175

Pro Gln Glu Leu Val Arg Ile Arg Ser Asp Arg Asp Lys Asn Leu Ser  
180 185 190

Leu Arg Tyr Ser Val Thr Gly Pro Gly Ala Asp Gln Pro Pro Thr Gly  
195 200 205

Ile Phe Ile Ile Asn Pro Ile Ser Gly Gln Leu Ser Val Thr Lys Pro  
210 215 220

Leu Asp Arg Glu Gln Ile Ala Arg Phe His Leu Arg Ala His Ala Val  
225 230 235 240

Asp Ile Asn Gly Asn Gln Val Glu Asn Pro Ile Asp Ile Val Ile Asn  
245 250 255

Val Ile Asp Met Asn Asp Asn Arg Pro Glu Phe Leu His Gln Val Trp  
260 265 270

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Asn Gly Thr Val Pro Glu Gly Ser Lys Pro Gly Thr Tyr Val Met Thr  
275 280 285

Val Thr Ala Ile Asp Ala Asp Asp Pro Asn Ala Leu Asn Gly Met Leu  
290 295 300

Arg Tyr Arg Ile Val Ser Gln Ala Pro Ser Thr Pro Ser Pro Asn Met  
305 310 315 320

Phe Thr Ile Asn Asn Glu Thr Gly Asp Ile Ile Thr Val Ala Ala Gly  
325 330 335

Leu Asp Arg Glu Lys Val Gln Gln Tyr Thr Leu Ile Ile Gln Ala Thr  
340 345 350

Asp Met Glu Gly Asn Pro Thr Tyr Gly Leu Ser Asn Thr Ala Thr Ala  
355 360 365

Val Ile Thr Val Thr Asp Trp Asn Asp Asn Pro Pro Glu Glu Thr Ala  
370 375 380

Met Thr Phe Tyr Gly Glu Val Pro Glu Asn Arg Val Asp Ile Ile Val  
385 390 395 400

Ala Asn Leu Thr Val Thr Asp Lys Asp Gln Pro His Thr Pro Ala Trp  
405 410 415

Asn Ala Val Tyr Arg Ile Ser Gly Gly Asp Pro Thr Gly Arg Phe Ala  
420 425 430

Ile Gln Thr Asp Pro Asn Ser Asn Asp Gly Leu Val Thr Val Val Lys  
435 440 445

Pro Ile Asp Phe Glu Thr Asn Arg Met Phe Val Leu Thr Val Ala Ala  
450 455 460

Glu Asn Gln Val Pro Leu Ala Lys Gly Ile Gln His Pro Pro Gln Ser  
465 470 475 480

Thr Ala Thr Val Ser Val Thr Val Ile Asp Val Asn Glu Asn Pro Tyr  
485 490 495

Phe Ala Pro Asn Pro Lys Ile Ile Arg Gln Glu Glu Gly Leu His Ala  
500 505 510

Gly Thr Met Leu Thr Thr Phe Thr Ala Gln Asp Pro Asp Arg Tyr Met  
515 520 525



Tyr Asp Leu Ser Gln Leu Gln Gln Pro Asp Thr Val Glu Pro Asp Ala  
785 790 795 800

Ile Lys Pro Val Gly Ile Arg Arg Met Asp Glu Arg Pro Ile His Ala  
805 810 815

Glu Pro Gln Tyr Pro Val Arg Ser Ala Ala Pro His Pro Gly Asp Ile  
820 825 830

Gly Asp Phe Ile Asn Glu Gly Leu Lys Ala Ala Asp Asn Asp Pro Thr  
835 840 845

Ala Pro Pro Tyr Asp Ser Leu Leu Val Phe Asp Tyr Glu Gly Ser Gly  
850 855 860

Ser Thr Ala Gly Ser Leu Ser Ser Leu Asn Ser Ser Ser Ser Gly Gly  
865 870 875 880

Glu Gln Asp Tyr Asp Tyr Leu Asn Asp Trp Gly Pro Arg Phe Lys Lys  
885 890 895

Leu Ala Asp Met Tyr Gly Gly Gly Asp Asp  
900 905

<210> 47  
<211> 877  
<212> PRT  
<213> Bos taurus

<400> 47  
Ser Leu Cys Lys Thr Gly Phe Pro Glu Asp Val Tyr Ser Ala Val Leu  
1 5 10 15

Ser Arg Asp Val Leu Glu Gly Gln Pro Leu Leu Asn Val Lys Phe Ser  
20 25 30

Asn Cys Asn Gly Lys Arg Lys Val Gln Tyr Glu Ser Ser Glu Pro Ala  
35 40 45

Asp Phe Lys Val Asp Glu Asp Gly Met Val Tyr Ala Val Arg Ser Phe  
50 55 60

Pro Leu Ser Ser Glu His Ser Lys Phe Leu Ile Tyr Ala Gln Asp Lys  
65 70 75 80

Glu Thr Gln Glu Lys Trp Gln Val Ala Val Lys Leu Ser Leu Lys Pro

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95

Ala Thr Ala Val Ile Thr Val Thr Asp Trp Asn Asp Asn Pro Pro Glu

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340	345	350
Glu Thr Ala Met Thr Phe Tyr Gly Glu Val Pro Glu Asn Arg Val Asp		
355	360	365
Val Ile Val Ala Asn Leu Thr Val Thr Asp Lys Asp Gln Pro His Thr		
370	375	380
Pro Ala Trp Asn Ala Ile Tyr Arg Ile Ser Gly Gly Asp Pro Ala Gly		
385	390	400
Arg Phe Ala Ile Gln Thr Asp Pro Asn Ser Asn Asp Gly Leu Val Thr		
405	410	415
Val Val Lys Pro Ile Asp Phe Glu Thr Asn Arg Met Tyr Val Leu Thr		
420	425	430
Val Ala Ala Glu Asn Gln Val Pro Leu Ala Lys Gly Ile Gln His Pro		
435	440	445
Pro Gln Ser Thr Ala Thr Val Ser Val Thr Val Ile Asp Val Asn Glu		
450	455	460
Asn Pro Tyr Phe Ala Pro Asn Pro Lys Ile Ile Arg Gln Glu Glu Gly		
465	470	480
Leu His Ala Gly Thr Val Leu Thr Thr Phe Thr Ala Gln Asp Pro Asp		
485	490	495
Arg Tyr Met Gln Gln Asn Ile Arg Tyr Thr Lys Leu Ser Asp Pro Ala		
500	505	510
Asn Trp Leu Lys Ile Asp Ser Val Asn Gly Gln Ile Thr Thr Ile Ala		
515	520	525
Val Leu Asp Arg Glu Ser Pro Asn Val Lys Ala Asn Ile Tyr Asn Ala		
530	535	540
Thr Phe Leu Ala Ser Asp Asn Gly Ile Pro Pro Met Ser Gly Thr Gly		
545	550	560
Thr Leu Gln Ile Tyr Leu Leu Asp Ile Asn Asp Asn Ala Pro Gln Val		
565	570	575
Leu Pro Gln Glu Ala Glu Ile Cys Glu Thr Pro Asp Pro Asn Ser Ile		
580	585	590
Asn Ile Thr Ala Leu Asp Tyr Asp Ile Asp Pro Asn Ala Gly Pro Phe		

595

600

605

Ala Phe Asp Leu Pro Leu Ser Pro Val Thr Ile Lys Arg Asn Trp Thr  
610 615 620

Ile Thr Arg Leu Asn Gly Asp Phe Ala Gln Leu Asn Leu Lys Ile Lys  
625 630 635 640

Phe Leu Glu Ala Gly Ile Tyr Glu Val Pro Ile Ile Ile Thr Asp Ser  
645 650 655

Gly Asn Pro Pro Lys Ser Asn Ile Ser Ile Leu Arg Val Lys Val Cys  
660 665 670

Gln Cys Asp Ser Asn Gly Asp Cys Thr Asp Val Asp Arg Ile Val Gly  
675 680 685

Ala Gly Leu Gly Thr Gly Ala Ile Ile Ala Ile Leu Leu Cys Ile Ile  
690 695 700

Ile Leu Leu Ile Leu Val Leu Met Phe Val Val Trp Met Lys Arg Arg  
705 710 715 720

Asp Lys Glu Arg Gln Ala Lys Gln Leu Leu Ile Asp Pro Glu Asp Asp  
725 730 735

Val Arg Asp Asn Ile Leu Lys Tyr Asp Glu Glu Gly Gly Gly Glu Glu  
740 745 750

Asp Gln Asp Tyr Asp Leu Ser Gln Leu Gln Gln Pro Asp Thr Val Glu  
755 760 765

Pro Asp Ala Ile Lys Pro Val Gly Ile Arg Arg Leu Asp Glu Arg Pro  
770 775 780

Ile His Ala Glu Pro Gln Tyr Pro Val Arg Ser Ala Ala Pro His Pro  
785 790 795 800

Gly Asp Ile Gly Asp Phe Ile Asn Glu Gly Leu Lys Ala Ala Asp Asn  
805 810 815

Asp Pro Thr Ala Pro Pro Tyr Asp Ser Leu Leu Val Phe Asp Tyr Glu  
820 825 830

Gly Ser Gly Ser Thr Ala Gly Ser Leu Ser Ser Leu Asn Ser Ser Ser  
835 840 845

Ser Gly Gly Glu Gln Asp Tyr Asp Tyr Leu Asn Asp Trp Gly Pro Arg

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850

855

860

Phe Lys Lys Leu Ala Asp Met Tyr Gly Gly Gly Asp Asp  
 865 870 875

<210> 48  
 <211> 906  
 <212> PRT  
 <213> Mus musculus

<400> 48  
 Met Cys Arg Ile Ala Gly Gly Arg Gly Thr Leu Leu Pro Leu Leu Ala  
 1 5 10 15

Ala Leu Leu Gln Ala Ser Val Glu Ala Ser Gly Glu Ile Ala Leu Cys  
 20 25 30

Lys Thr Gly Phe Pro Glu Asp Val Tyr Ser Ala Val Leu Pro Lys Asp  
 35 40 45

Val His Glu Gly Gln Pro Leu Leu Asn Val Lys Phe Ser Asn Cys Asn  
 50 55 60

Arg Lys Arg Lys Val Gln Tyr Glu Ser Ser Glu Pro Ala Asp Phe Lys  
 65 70 75 80

Val Asp Glu Asp Gly Thr Val Tyr Ala Val Arg Ser Phe Pro Leu Thr  
 85 90 95

Ala Phe Gln Ala Lys Phe Leu Ile Tyr Ala Gln Asp Lys Glu Thr Gln  
 100 105 110

Glu Lys Trp Gln Val Ala Val Asn Leu Ser Arg Glu Pro Thr Leu Thr  
 115 120 125

Glu Glu Pro Met Lys Glu Pro His Glu Ile Glu Glu Ile Val Phe Pro  
 130 135 140

Arg Gln Leu Ala Lys His Ser Gly Ala Leu Gln Arg Gln Lys Arg Asp  
 145 150 155 160

Trp Val Ile Pro Pro Ile Asn Leu Pro Glu Asn Ser Arg Gly Pro Phe  
 165 170 175

Pro Gln Glu Leu Val Arg Ile Arg Ser Asp Arg Asp Lys Asn Leu Ser  
 180 185 190

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Leu Arg Tyr Ser Val Thr Gly Pro Gly Ala Asp Gln Pro Pro Thr Gly  
195 200 205

Ile Phe Ile Ile Asn Pro Ile Ser Gly Gln Leu Ser Val Thr Lys Pro  
210 215 220

Leu Asp Arg Glu Leu Ile Ala Arg Phe His Leu Arg Ala His Ala Val  
225 230 235 240

Asp Ile Asn Gly Asn Gln Val Glu Asn Pro Ile Asp Ile Val Ile Asn  
245 250 255

Val Ile Asp Met Asn Asp Asn Arg Pro Glu Phe Leu His Gln Val Trp  
260 265 270

Asn Gly Ser Val Pro Glu Gly Ser Lys Pro Gly Thr Tyr Val Met Thr  
275 280 285

Val Thr Ala Ile Asp Ala Asp Asp Pro Asn Ala Leu Asn Gly Met Leu  
290 295 300

Arg Tyr Arg Ile Leu Ser Gln Ala Pro Ser Thr Pro Ser Pro Asn Met  
305 310 315 320

Phe Thr Ile Asn Asn Glu Thr Gly Asp Ile Ile Thr Val Ala Ala Gly  
325 330 335

Leu Asp Arg Glu Lys Val Gln Gln Tyr Thr Leu Ile Ile Gln Ala Thr  
340 345 350

Asp Met Glu Gly Asn Pro Thr Tyr Gly Leu Ser Asn Thr Ala Thr Ala  
355 360 365

Val Ile Thr Val Thr Asp Trp Asn Asp Asn Pro Pro Glu Glu Thr Ala  
370 375 380

Met Thr Phe Tyr Gly Glu Val Pro Glu Asn Arg Val Asp Val Ile Val  
385 390 395 400

Ala Asn Leu Thr Val Thr Asp Lys Asp Gln Pro His Thr Pro Ala Trp  
405 410 415

Asn Ala Ala Tyr Arg Ile Ser Gly Gly Asp Pro Thr Gly Arg Phe Ala  
420 425 430

Ile Leu Thr Asp Pro Asn Ser Asn Asp Gly Leu Val Thr Val Val Lys  
435 440 445

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Pro Ile Asp Phe Glu Thr Asn Arg Met Phe Val Leu Thr Val Ala Ala  
450 455 460

Glu Asn Gln Val Pro Leu Ala Lys Gly Ile Gln His Pro Pro Gln Ser  
465 470 475 480

Thr Ala Thr Val Ser Val Thr Val Ile Asp Val Asn Glu Asn Pro Tyr  
485 490 495

Phe Ala Pro Asn Pro Lys Ile Ile Arg Gln Glu Glu Gly Leu His Ala  
500 505 510

Gly Thr Met Leu Thr Thr Leu Thr Ala Gln Asp Pro Asp Arg Tyr Met  
515 520 525

Gln Gln Asn Ile Arg Tyr Thr Lys Leu Ser Asp Pro Ala Asn Trp Leu  
530 535 540

Lys Ile Asp Pro Val Asn Gly Gln Ile Thr Thr Ile Ala Val Leu Asp  
545 550 555 560

Arg Glu Ser Pro Tyr Val Gln Asn Asn Ile Tyr Asn Ala Thr Phe Leu  
565 570 575

Ala Ser Asp Asn Gly Ile Pro Pro Met Ser Gly Thr Gly Thr Leu Gln  
580 585 590

Ile Tyr Leu Leu Asp Ile Asn Asp Asn Ala Pro Gln Val Leu Pro Gln  
595 600 605

Glu Ala Glu Thr Cys Glu Thr Pro Glu Pro Asn Ser Ile Asn Ile Ala  
610 615 620

Ala Leu Asp Tyr Asp Ile Asp Pro Asn Ala Gly Pro Phe Ala Phe Asp  
625 630 635 640

Leu Pro Leu Ser Pro Val Thr Ile Lys Arg Asn Trp Thr Ile Asn Arg  
645 650 655

Leu Asn Gly Asp Phe Ala Gln Leu Asn Leu Lys Ile Lys Phe Leu Glu  
660 665 670

Ala Gly Ile Tyr Glu Val Pro Ile Ile Ile Thr Asp Ser Gly Asn Pro  
675 680 685

Pro Lys Ser Asn Ile Ser Ile Leu Arg Val Lys Val Cys Gln Cys Asp  
690 695 700

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Ser Asn Gly Asp Cys Thr Asp Val Asp Arg Ile Val Gly Ala Gly Leu  
705 710 715 720

Gly Thr Gly Ala Ile Ile Ala Ile Leu Leu Cys Ile Ile Ile Leu Leu  
725 730 735

Ile Leu Val Leu Met Phe Val Val Trp Met Lys Arg Arg Asp Lys Glu  
740 745 750

Arg Gln Ala Lys Gln Leu Leu Ile Asp Pro Glu Asp Asp Val Arg Asp  
755 760 765

Asn Ile Leu Lys Tyr Asp Glu Glu Gly Gly Gly Glu Glu Asp Gln Asp  
770 775 780

Tyr Asp Leu Ser Gln Leu Gln Gln Pro Asp Thr Val Glu Pro Asp Ala  
785 790 795 800

Ile Lys Pro Val Gly Ile Arg Arg Leu Asp Glu Arg Pro Ile His Ala  
805 810 815

Glu Pro Gln Tyr Pro Val Arg Ser Ala Ala Pro His Pro Gly Asp Ile  
820 825 830

Gly Asp Phe Ile Asn Glu Gly Leu Lys Ala Ala Asp Asn Asp Pro Thr  
835 840 845

Ala Pro Pro Tyr Asp Ser Leu Leu Val Phe Asp Tyr Glu Gly Ser Gly  
850 855 860

Ser Thr Ala Gly Ser Leu Ser Ser Leu Asn Ser Ser Ser Ser Gly Gly  
865 870 875 880

Asp Gln Asp Tyr Asp Tyr Leu Asn Asp Trp Gly Pro Arg Phe Lys Lys  
885 890 895

Leu Ala Asp Met Tyr Gly Gly Gly Asp Asp  
900 905

<210> 49  
<211> 912  
<212> PRT  
<213> Gallus gallus

<400> 49  
Met Cys Arg Ile Ala Gly Thr Pro Pro Arg Ile Leu Pro Pro Leu Ala  
1 5 10 15

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Leu Met Leu Leu Ala Ala Leu Gln Gln Ala Pro Ile Lys Ala Thr Cys  
20 25 30

Glu Asp Met Leu Cys Lys Met Gly Phe Pro Glu Asp Val His Ser Ala  
35 40 45

Val Val Ser Arg Ser Val His Gly Gly Gln Pro Leu Leu Asn Val Arg  
50 55 60

Phe Gln Ser Cys Asp Glu Asn Arg Lys Ile Tyr Phe Gly Ser Ser Glu  
65 70 75 80

Pro Glu Asp Phe Arg Val Gly Glu Asp Gly Val Val Tyr Ala Glu Arg  
85 90 95

Ser Phe Gln Leu Ser Ala Glu Pro Thr Glu Phe Val Val Ser Ala Arg  
100 105 110

Asp Lys Glu Thr Gln Glu Glu Trp Gln Met Lys Val Lys Leu Thr Pro  
115 120 125

Glu Pro Ala Phe Thr Gly Ala Ser Glu Lys Asp Gln Lys Lys Ile Glu  
130 135 140

Asp Ile Ile Phe Pro Trp Gln Gln Tyr Lys Asp Ser Ser His Leu Lys  
145 150 155 160

Arg Gln Lys Arg Asp Trp Val Ile Pro Pro Ile Asn Leu Pro Glu Asn  
165 170 175

Ser Arg Gly Pro Phe Pro Gln Glu Leu Val Arg Ile Arg Ser Asp Arg  
180 185 190

Asp Lys Ser Leu Ser Leu Arg Tyr Ser Val Thr Gly Pro Gly Ala Asp  
195 200 205

Gln Pro Pro Thr Gly Ile Phe Ile Ile Asn Pro Ile Ser Gly Gln Leu  
210 215 220

Ser Val Thr Lys Pro Leu Asp Arg Glu Gln Ile Ala Ser Phe His Leu  
225 230 235 240

Arg Ala His Ala Val Asp Val Asn Gly Asn Gln Val Glu Asn Pro Ile  
245 250 255

Asp Ile Val Ile Asn Val Ile Asp Met Asn Asp Asn Arg Pro Glu Phe  
260 265 270

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Leu His Gln Val Trp Asn Gly Thr Val Pro Glu Gly Ser Lys Pro Gly  
275 280 285

Thr Tyr Val Met Thr Val Thr Ala Ile Asp Ala Asp Asp Pro Asn Ala  
290 295 300

Gln Asn Gly Met Leu Arg Tyr Arg Ile Leu Ser Gln Ala Pro Ser Ser  
305 310 315 320

Pro Ser Pro Asn Met Phe Thr Ile Asn Asn Glu Thr Gly Asp Ile Ile  
325 330 335

Thr Val Ala Ala Gly Leu Asp Arg Glu Lys Val Gln Gln Tyr Thr Leu  
340 345 350

Ile Ile Gln Ala Thr Asp Met Glu Gly Asn Pro Thr Tyr Gly Leu Ser  
355 360 365

Asn Thr Ala Thr Ala Val Ile Thr Val Thr Asp Trp Asn Asp Asn Pro  
370 375 380

Pro Glu Glu Thr Ala Met Thr Phe Tyr Gly Glu Val Pro Glu Asn Arg  
385 390 395 400

Val Asp Val Ile Val Ala Asn Leu Thr Val Thr Asp Lys Asp Gln Pro  
405 410 415

His Thr Pro Ala Trp Asn Ala Arg Tyr Gln Met Thr Gly Gly Asp Pro  
420 425 430

Thr Gly Gln Phe Thr Ile Leu Thr Asp Pro Asn Ser Asn Asp Gly Leu  
435 440 445

Val Thr Val Val Lys Pro Ile Asp Phe Glu Thr Asn Arg Met Phe Val  
450 455 460

Leu Thr Val Ala Ala Glu Asn Gln Val Pro Leu Ala Lys Gly Ile Gln  
465 470 475 480

His Pro Pro Gln Ser Thr Ala Thr Val Ser Ile Thr Val Ile Asp Val  
485 490 495

Asn Glu Ser Pro Tyr Phe Val Pro Asn Pro Lys Leu Val Arg Gln Glu  
500 505 510

Glu Gly Leu Leu Ala Gly Ser Met Leu Thr Thr Phe Thr Ala Arg Asp  
515 520 525

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Pro Asp Arg Tyr Met Gln Gln Thr Ser Leu Arg Tyr Ser Lys Leu Ser  
530 535 540

Asp Pro Ala Asn Trp Leu Lys Ile Asp Pro Val Asn Gly Gln Ile Thr  
545 550 555 560

Thr Thr Ala Val Leu Asp Arg Glu Ser Ile Tyr Val Gln Asn Asn Met  
565 570 575

Tyr Asn Ala Thr Phe Leu Ala Ser Asp Asn Gly Ile Pro Pro Met Ser  
580 585 590

Gly Thr Gly Thr Leu Gln Ile Tyr Leu Leu Asp Ile Asn Asp Asn Ala  
595 600 605

Pro Gln Val Asn Pro Lys Glu Ala Thr Thr Cys Glu Thr Leu Gln Pro  
610 615 620

Asn Ala Ile Asn Ile Thr Ala Val Asp Pro Asp Ile Asp Pro Asn Ala  
625 630 635 640

Gly Pro Phe Ala Phe Glu Leu Pro Asp Ser Pro Pro Ser Ile Lys Arg  
645 650 655

Asn Trp Thr Ile Val Arg Ile Ser Gly Asp His Ala Gln Leu Ser Leu  
660 665 670

Arg Ile Arg Phe Leu Glu Ala Gly Ile Tyr Asp Val Pro Ile Val Ile  
675 680 685

Thr Asp Ser Gly Asn Pro His Ala Ser Ser Thr Ser Val Leu Lys Val  
690 695 700

Lys Val Cys Gln Cys Asp Ile Asn Gly Asp Cys Thr Asp Val Asp Arg  
705 710 715 720

Ile Val Gly Ala Gly Leu Gly Thr Gly Ala Ile Ile Ala Ile Leu Leu  
725 730 735

Cys Ile Ile Ile Leu Leu Ile Leu Val Leu Met Phe Val Val Trp Met  
740 745 750

Lys Arg Arg Asp Lys Glu Arg Gln Ala Lys Gln Leu Leu Ile Asp Pro  
755 760 765

Glu Asp Asp Val Arg Asp Asn Ile Leu Lys Tyr Asp Glu Glu Gly Gly  
770 775 780

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aaggcacact gtaaatacaa gttgagtaac cctaataaaa aaatctgaaa tctaaaatgc 60  
 tccaaaatcc aaaacttttt gagtgccaac atgatgctca aaggaaatgc tcattgg 117

<210> 52  
 <211> 89  
 <212> DNA  
 <213> Homo sapiens

<400> 52  
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 atgcatccat attaacttcc aaatgcaaa 89

<210> 53  
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 <212> DNA  
 <213> Homo sapiens

<400> 53  
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 aaagttttta aaacaaacaa aactaa 86

<210> 54  
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 <212> DNA  
 <213> Homo sapiens

<400> 54  
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<210> 55  
 <211> 854  
 <212> DNA  
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<400> 55  
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 ctggagctgc ggcagcagga gctgcgggcg cgctacaacc tcagccaggg cggctacgag 180

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ggcttcggcg actacgtggc gctgcagaag gaccaggccc tgcagacgca gccgcagtac 660  
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ctcgtggtgc tgcgcttcat gaccatgaac gccgaggacg agaagcgca cgccgagcac 780  
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<210> 56  
<211> 1286  
<212> DNA  
<213> Homo sapiens

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gctggtgggc gctgctgtct tcgacgcgct cgagtccgag gcgaaaagcg gccgccagcg 180  
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cgcgccgggt acggactccg gcaaggtctt ctgcatgttc tacgcgctcc tgggcatccc 420  
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 aatctggaat gggaggggtc ggcttcagct atcagggcac cctccccagg gattggaaac 1140  
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 aagtccctc cttctttcc aaaaatatat tacagtcacc ccataaaaaa aaaaaaaaaa 1260  
 aaaaaaaaaa aaaaaaaaaa aaaaaa 1286

<210> 57  
 <211> 1286  
 <212> DNA  
 <213> Homo sapiens

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 gctggtgggc gctgctgtct tcgacgcgct cgagtccgag gcggaaagcg gccgccagcg 180  
 actgctggtc cagaagcggg gcgctctccg gaggaagttc ggcttctcgg ccgaggacta 240  
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 gttccccggc tcttctact tcgcatcac cgtcatcact accatcgggt acggccacgc 360  
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gctgacgctg gtcactttcc agagcctggg cgaacggctg aacgcggtgg tgcggcgcct 480  
cctgttggcg gccaaagtgt gcctgggcct gcggtggacg tgcgtgtcca cggagaacct 540  
ggtggtggcc gggctgctgg cgtgtgccgc caccctggcc ctcggggccg tcgccttctc 600  
gcacttcgag ggctggacct tcttccacgc ctactactac tgcttcatca ccctcaccac 660  
catcggttcc ggcgacttcg tggcactgca gagcggcgag gcgctgcaga ggaagctccc 720  
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cccggccccgc tccgtgggct ccgcctctgt cttctgccac gtgcacaagc tggagagggtg 960  
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ggctcccagg cctggggccc ggtggaagtc catctgacaa cccacccag gccagggctc 1080  
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<210> 58  
<211> 330  
<212> PRT  
<213> Homo sapiens

<400> 58  
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1 5 10 15  
Cys Tyr Leu Leu Val Gly Ala Ala Val Phe Asp Ala Leu Glu Ser Glu  
20 25 30  
Ala Glu Ser Gly Arg Gln Arg Leu Leu Val Gln Lys Arg Gly Ala Leu  
35 40 45  
Arg Arg Lys Phe Gly Phe Ser Ala Glu Asp Tyr Arg Glu Leu Glu Arg  
50 55 60

Leu	Ala	Leu	Gln	Ala	Glu	Pro	His	Arg	Ala	Gly	Arg	Gln	Trp	Lys	Phe	65	70	75	80
Pro	Gly	Ser	Phe	Tyr	Phe	Ala	Ile	Thr	Val	Ile	Thr	Thr	Ile	Glu	Tyr	85	90	95	
Gly	His	Ala	Ala	Pro	Gly	Thr	Asp	Ser	Gly	Lys	Val	Phe	Cys	Met	Phe	100	105	110	
Tyr	Ala	Leu	Leu	Gly	Ile	Pro	Leu	Thr	Leu	Val	Thr	Phe	Gln	Ser	Leu	115	120	125	
Gly	Glu	Arg	Leu	Asn	Ala	Val	Val	Arg	Arg	Leu	Leu	Leu	Ala	Ala	Lys	130	135	140	
Cys	Cys	Leu	Gly	Leu	Arg	Trp	Thr	Cys	Val	Ser	Thr	Glu	Asn	Leu	Val	145	150	155	160
Val	Ala	Gly	Leu	Leu	Ala	Cys	Ala	Ala	Thr	Leu	Ala	Leu	Gly	Ala	Val	165	170	175	
Ala	Phe	Ser	His	Phe	Glu	Gly	Trp	Thr	Phe	Phe	His	Ala	Tyr	Tyr	Tyr	180	185	190	
Cys	Phe	Ile	Thr	Leu	Thr	Thr	Ile	Gly	Phe	Gly	Asp	Phe	Val	Ala	Leu	195	200	205	
Gln	Ser	Gly	Glu	Ala	Leu	Gln	Arg	Lys	Leu	Pro	Tyr	Val	Ala	Phe	Ser	210	215	220	
Phe	Leu	Tyr	Ile	Leu	Leu	Gly	Leu	Thr	Val	Ile	Gly	Ala	Phe	Leu	Asn	225	230	235	240
Leu	Val	Val	Leu	Arg	Phe	Leu	Val	Ala	Ser	Ala	Asp	Trp	Pro	Glu	Arg	245	250	255	
Ala	Ala	Arg	Thr	Pro	Ser	Pro	Arg	Pro	Pro	Gly	Ala	Pro	Glu	Ser	Arg	260	265	270	
Gly	Leu	Trp	Leu	Pro	Arg	Arg	Pro	Ala	Arg	Ser	Val	Gly	Ser	Ala	Ser	275	280	285	
Val	Phe	Cys	His	Val	His	Lys	Leu	Glu	Arg	Cys	Ala	Arg	Asp	Asn	Leu	290	295	300	
Gly	Phe	Ser	Pro	Pro	Ser	Ser	Pro	Gly	Val	Val	Arg	Gly	Gly	Gln	Ala	305	310	315	320

Pro Arg Leu Gly Ala Arg Trp Lys Ser Ile  
 325 330

<210> 59  
 <211> 330  
 <212> PRT  
 <213> Homo sapiens

<400> 59  
 Met Arg Arg Pro Ser Val Arg Ala Ala Gly Leu Val Leu Cys Thr Leu  
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Cys Tyr Leu Leu Val Gly Ala Ala Val Phe Asp Ala Leu Glu Ser Glu  
 20 25 30

Ala Glu Ser Gly Arg Gln Arg Leu Leu Val Gln Lys Arg Gly Ala Leu  
 35 40 45

Arg Arg Lys Phe Gly Phe Ser Ala Glu Asp Tyr Arg Glu Leu Glu Arg  
 50 55 60

Leu Ala Leu Gln Ala Glu Pro His Arg Ala Gly Arg Gln Trp Lys Phe  
 65 70 75 80

Pro Gly Ser Phe Tyr Phe Ala Ile Thr Val Ile Thr Thr Ile Gly Tyr  
 85 90 95

Gly His Ala Ala Pro Gly Thr Asp Ser Gly Lys Val Phe Cys Met Phe  
 100 105 110

Tyr Ala Leu Leu Gly Ile Pro Leu Thr Leu Val Thr Phe Gln Ser Leu  
 115 120 125

Gly Glu Arg Leu Asn Ala Val Val Arg Arg Leu Leu Leu Ala Ala Lys  
 130 135 140

Cys Cys Leu Gly Leu Arg Trp Thr Cys Val Ser Thr Glu Asn Leu Val  
 145 150 155 160

Val Ala Gly Leu Leu Ala Cys Ala Ala Thr Leu Ala Leu Gly Ala Val  
 165 170 175

Ala Phe Ser His Phe Glu Gly Trp Thr Phe Phe His Ala Tyr Tyr Tyr  
 180 185 190

Cys Phe Ile Thr Leu Thr Thr Ile Gly Phe Gly Asp Phe Val Ala Leu

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195

200

205

Gln Ser Gly Glu Ala Leu Gln Arg Lys Leu Pro Tyr Val Ala Phe Ser  
210 215 220

Phe Leu Tyr Ile Leu Leu Gly Leu Thr Val Ile Gly Ala Phe Leu Asn  
225 230 235 240

Leu Val Val Leu Arg Phe Leu Val Ala Ser Ala Asp Trp Pro Glu Arg  
245 250 255

Ala Ala Arg Pro Pro Ser Pro Arg Pro Pro Gly Ala Pro Glu Ser Arg  
260 265 270

Gly Leu Trp Leu Pro Arg Arg Pro Ala Arg Ser Val Gly Ser Ala Ser  
275 280 285

Val Phe Cys His Val His Lys Leu Glu Arg Cys Ala Arg Asp Asn Leu  
290 295 300

Gly Phe Ser Pro Pro Ser Ser Pro Gly Val Val Arg Gly Gly Gln Ala  
305 310 315 320

Pro Arg Pro Gly Ala Arg Trp Lys Ser Ile  
325 330

&lt;210&gt; 60

&lt;211&gt; 365

&lt;212&gt; PRT

&lt;213&gt; Cavia porcellus

&lt;400&gt; 60

Met Lys Lys Gln Asn Val Arg Thr Leu Ser Leu Ile Ala Cys Thr Phe  
1 5 10 15

Thr Tyr Leu Leu Val Gly Ala Ala Val Phe Asp Ala Leu Glu Ser Asp  
20 25 30

His Glu Met Arg Glu Glu Glu Lys Leu Lys Ala Glu Glu Ile Arg Ile  
35 40 45

Arg Gly Lys Tyr Asn Ile Ser Thr Glu Asp Tyr Arg Gln Leu Glu Leu  
50 55 60

Val Ile Leu Gln Ser Glu Pro His Arg Ala Gly Val Gln Trp Lys Phe  
65 70 75 80

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Ala Gly Ser Phe Tyr Phe Ala Ile Thr Val Ile Thr Thr Ile Gly Tyr  
85 90 95

Gly His Ala Ala Pro Gly Thr Asp Ala Gly Lys Ala Phe Cys Met Phe  
100 105 110

Tyr Ala Val Leu Gly Ile Pro Leu Thr Leu Val Met Phe Gln Ser Leu  
115 120 125

Gly Glu Arg Met Asn Thr Phe Val Arg Tyr Leu Leu Lys Arg Ile Lys  
130 135 140

Lys Cys Cys Gly Met Arg Asn Thr Glu Val Ser Met Glu Asn Met Val  
145 150 155 160

Thr Val Gly Phe Phe Ser Cys Met Gly Thr Leu Cys Ile Gly Ala Ala  
165 170 175

Ala Phe Ser Gln Cys Glu Glu Trp Ser Phe Phe His Ala Tyr Tyr Tyr  
180 185 190

Cys Phe Ile Thr Leu Thr Thr Ile Gly Phe Gly Asp Tyr Val Ala Leu  
195 200 205

Gln Ser Lys Gly Ala Leu Gln Arg Lys Pro Phe Tyr Val Ala Phe Ser  
210 215 220

Phe Met Tyr Ile Leu Val Gly Leu Thr Val Ile Gly Ala Phe Leu Asn  
225 230 235 240

Leu Val Val Leu Arg Phe Leu Thr Met Asn Ser Asp Glu Glu Arg Gly  
245 250 255

Glu Gly Glu Glu Gly Ala Ala Leu Pro Gly Asn Pro Ser Ser Val Val  
260 265 270

Thr His Ile Ser Glu Glu Ala Arg Gln Val Arg Gln Arg Tyr Arg Gly  
275 280 285

Glu Gly Gly Asp Leu Gln Ser Val Cys Ser Cys Ala Cys Tyr Arg Ser  
290 295 300

Gln Pro Gln Asn Phe Gly Ala Thr Leu Ala Pro Gln Pro Leu His Ser  
305 310 315 320

Ile Ser Cys Arg Ile Glu Glu Ile Ser Pro Ser Thr Leu Lys Asn Ser  
325 330 335

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Leu Phe Pro Ser Pro Ile Ser Ser Val Ser Pro Gly Leu His Ser Phe  
 340 345 350

Gly Asp Asn His Arg Leu Met Leu Arg Arg Lys Ser Val  
 355 360 365

<210> 61  
 <211> 258  
 <212> PRT  
 <213> Mus musculus

<400> 61  
 Met Lys Arg Gln Asn Val Arg Thr Leu Ala Leu Ile Val Cys Thr Phe  
 1 5 10 15

Thr Tyr Leu Leu Val Gly Ala Ala Val Phe Asp Ala Leu Glu Ser Glu  
 20 25 30

Pro Glu Met Ile Glu Arg Gln Arg Leu Glu Leu Arg Gln Leu Glu Leu  
 35 40 45

Arg Ala Arg Tyr Asn Leu Ser Glu Gly Gly Tyr Glu Glu Leu Glu Arg  
 50 55 60

Val Val Leu Arg Leu Lys Pro His Lys Ala Gly Val Gln Trp Arg Phe  
 65 70 75 80

Ala Gly Ser Phe Tyr Phe Ala Ile Thr Val Ile Thr Thr Ile Gly Tyr  
 85 90 95

Gly His Ala Ala Pro Ser Thr Asp Gly Gly Lys Val Phe Cys Met Phe  
 100 105 110

Tyr Ala Leu Leu Gly Ile Pro Leu Thr Leu Val Met Phe Gln Ser Leu  
 115 120 125

Gly Glu Arg Ile Asn Thr Phe Val Arg Tyr Leu Leu His Arg Ala Lys  
 130 135 140

Arg Gly Leu Gly Met Arg His Ala Glu Val Ser Met Ala Asn Met Val  
 145 150 155 160

Leu Ile Gly Phe Val Ser Cys Ile Ser Thr Leu Cys Ile Gly Ala Ala  
 165 170 175

Ala Phe Ser Tyr Tyr Glu Arg Trp Thr Phe Phe Gln Ala Tyr Tyr Tyr  
 180 185 190

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Cys Phe Ile Thr Leu Thr Thr Ile Gly Phe Gly Asp Tyr Val Ala Leu  
 195 200 205

Gln Lys Asp Gln Ala Leu Gln Thr Gln Pro Gln Tyr Val Ala Phe Ser  
 210 215 220

Phe Val Tyr Ile Leu Thr Gly Leu Thr Val Ile Gly Ala Phe Leu Asn  
 225 230 235 240

Leu Val Val Leu Arg Phe Met Thr Met Asn Ala Glu Asp Glu Lys Arg  
 245 250 255

Asp Ala

<210> 62  
 <211> 35  
 <212> PRT  
 <213> Mus musculus

<400> 62  
 Ser Cys Leu Ser Gly Ser Leu Gly Asp Gly Val Arg Pro Arg Asp Pro  
 1 5 10 15

Val Thr Cys Ala Ala Ala Ala Gly Gly Val Gly Val Gly Val Gly Gly  
 20 25 30

Ser Gly Phe  
 35

<210> 63  
 <211> 39  
 <212> PRT  
 <213> Mus musculus

<400> 63  
 Thr Cys Val Glu His Ser His Ser Ser Pro Gly Gly Gly Gly Arg Tyr  
 1 5 10 15

Ser Asp Thr Pro Ser His Pro Cys Leu Cys Ser Gly Thr Gln Arg Ser  
 20 25 30

Ala Ile Ser Ser Val Ser Thr  
 35

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<210> 64  
<211> 388  
<212> DNA  
<213> Homo sapiens

<400> 64  
aggcggcatc tgctggtcct gctgctgctc ctctctaccc tggatgaccc ctccgctgca 60  
gctcctatcc atgatgctga cgcccaagag agctccttgg gtctcacagg cctccagagc 120  
ctactccaag gcttcagccg acttttctctg aaaggtaacc tgcttcgggg catagacagc 180  
ttattctctg ccccatgga cttccggggc ctccctggga actaccacaa agaggagaac 240  
caggagcacc agctggggaa caacaccctc tccagccacc tccagatcga caagatgacc 300  
gacaacaaga caggagaggt gctgatctcc gagaatgtgg tggcatccat tcaaccagcg 360  
gaggggagct tcgagggatga tttgaagg 388

<210> 65  
<211> 322  
<212> DNA  
<213> Homo sapiens

<400> 65  
ggagaaggag gccctggtac ccatccagaa ggccacggac agcttccaca cagaactcca 60  
tccccgggtg gccttctgga tcattaagct gccacggcgg aggtcccacc aggatgccct 120  
ggagggcggc cactggctca gcgagaagcg acaccgcctg caggccatcc gggatggact 180  
ccgcaagggg acccacaagg acgtcctaga agaggggacc gagagctcct ccactccag 240  
gctgtcccc cgaagaccc acttactgta catcctcagg ccctctcggc agctgtaggg 300  
gtggggaccg gggagcacct gc 322

<210> 66  
<211> 218  
<212> PRT  
<213> Homo sapiens

<400> 66  
Arg His Leu Leu Val Leu Leu Leu Leu Ser Thr Leu Val Ile Pro

1                      5                      10                      15  
 Ser Ala Ala Ala Pro Ile His Asp Ala Asp Ala Gln Glu Ser Ser Leu  
                     20                      25                      30  
 Gly Leu Thr Gly Leu Gln Ser Leu Leu Gln Gly Phe Ser Arg Leu Phe  
                     35                      40                      45  
 Leu Lys Gly Asn Leu Leu Arg Gly Ile Asp Ser Leu Phe Ser Ala Pro  
                     50                      55                      60  
 Met Asp Phe Arg Gly Leu Pro Gly Asn Tyr His Lys Glu Glu Asn Gln  
                     65                      70                      75                      80  
 Glu His Gln Leu Gly Asn Asn Thr Leu Ser Ser His Leu Gln Ile Asp  
                     85                      90                      95  
 Lys Met Thr Asp Asn Lys Thr Gly Glu Val Leu Ile Ser Glu Asn Val  
                     100                      105                      110  
 Val Ala Ser Ile Gln Pro Ala Glu Gly Ser Phe Glu Gly Asp Leu Lys  
                     115                      120                      125  
 Val Pro Arg Met Glu Glu Lys Glu Ala Leu Val Pro Ile Gln Lys Ala  
                     130                      135                      140  
 Thr Asp Ser Phe His Thr Glu Leu His Pro Arg Val Ala Phe Trp Ile  
                     145                      150                      155                      160  
 Ile Lys Leu Pro Arg Arg Arg Ser His Gln Asp Ala Leu Glu Gly Gly  
                     165                      170                      175  
 His Trp Leu Ser Glu Lys Arg His Arg Leu Gln Ala Ile Arg Asp Gly  
                     180                      185                      190  
 Leu Arg Lys Gly Thr His Lys Asp Val Leu Glu Glu Gly Thr Glu Ser  
                     195                      200                      205  
 Ser Ser His Ser Arg Leu Ser Pro Arg Lys  
                     210                      215

<210> 67  
 <211> 15  
 <212> PRT  
 <213> Homo sapiens  
  
 <400> 67

Arg Lys Thr His Leu Leu Tyr Ile Leu Arg Pro Ser Arg Gln Leu  
 1 5 10 15

<210> 68  
 <211> 242  
 <212> PRT  
 <213> Homo sapiens

<400> 68  
 Met Gly Glu Ala Ser Pro Pro Ala Pro Ala Arg Arg His Leu Leu Val  
 1 5 10 15

Leu Leu Leu Leu Leu Ser Thr Leu Val Ile Pro Ser Ala Ala Ala Pro  
 20 25 30

Ile His Asp Ala Asp Ala Gln Glu Ser Ser Leu Gly Leu Thr Gly Leu  
 35 40 45

Gln Ser Leu Leu Gln Gly Phe Ser Arg Leu Phe Leu Lys Gly Asn Leu  
 50 55 60

Leu Arg Gly Ile Asp Ser Leu Phe Ser Ala Pro Met Asp Phe Arg Gly  
 65 70 75 80

Leu Pro Gly Asn Tyr His Lys Glu Glu Asn Gln Glu His Gln Leu Gly  
 85 90 95

Asn Asn Thr Leu Ser Ser His Leu Gln Ile Asp Lys Met Thr Asp Asn  
 100 105 110

Lys Thr Gly Glu Val Leu Ile Ser Glu Asn Val Val Ala Ser Ile Gln  
 115 120 125

Pro Ala Glu Gly Ser Phe Glu Gly Asp Leu Lys Val Pro Arg Met Glu  
 130 135 140

Glu Lys Glu Ala Leu Val Pro Ile Gln Lys Ala Thr Asp Ser Phe His  
 145 150 155 160

Thr Glu Leu His Pro Arg Val Ala Phe Trp Ile Ile Lys Leu Pro Arg  
 165 170 175

Arg Arg Ser His Gln Asp Ala Leu Glu Gly Gly His Trp Leu Ser Glu  
 180 185 190

Lys Arg His Arg Leu Gln Ala Ile Arg Asp Gly Leu Arg Lys Gly Thr  
 195 200 205

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His Lys Asp Val Leu Glu Glu Gly Thr Glu Ser Ser Ser His Ser Arg  
 210 215 220

Leu Ser Pro Arg Lys Thr His Leu Leu Tyr Ile Leu Arg Pro Ser Arg  
 225 230 235 240

Gln Leu

<210> 69  
 <211> 230  
 <212> PRT  
 <213> Mus musculus

<400> 69  
 Met Cys Arg Leu Arg Val Leu Leu Leu Leu Leu Pro Leu Ala Phe Val  
 1 5 10 15

Ser Ser Ser Ala Leu Pro Ile His Asp Val Asp Ser Gln Gln Asn Thr  
 20 25 30

Ser Gly Phe Leu Gly Leu Gln Arg Leu Leu Gln Ser Phe Ser Arg Leu  
 35 40 45

Phe Leu Lys Asn Asp Leu Leu Arg Asp Leu Asp Asn Phe Phe Ser Ser  
 50 55 60

Pro Met Asp Phe Arg Asp Leu Pro Arg Asn Phe His Gln Glu Glu Asn  
 65 70 75 80

Gln Glu His Arg Met Gly Asn His Thr Leu Ser Ser His Leu Gln Ile  
 85 90 95

Asp Lys Val Thr Asp Asn Gln Thr Gly Glu Val Leu Ile Ser Glu Lys  
 100 105 110

Val Glu Ala Ser Ile Glu Pro Glu Arg Asn Pro Glu Gly Asp Trp Lys  
 115 120 125

Val Pro Lys Val Glu Ala Lys Glu Pro Pro Val Pro Val Gln Lys Val  
 130 135 140

Thr Asp Ser Leu His Pro Glu Pro Arg Gln Val Ala Phe Trp Ile Met  
 145 150 155 160

Lys Met Pro Arg Arg Arg Thr Gln Pro Asp Val Gln Asp Gly Gly Arg

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165

170

175

Trp Leu Ile Glu Lys Arg His Arg Met Gln Ala Ile Arg Asp Gly Leu  
 180 185 190

Arg Gly Gly Ala Arg Glu Asp Ser Leu Glu Asp Gly Val His Ile Pro  
 195 200 205

Gln His Ala Lys Leu Pro Val Arg Lys Thr His Phe Leu Tyr Ile Leu  
 210 215 220

Arg Pro Ser Gln Gln Leu  
 225 230

<210> 70  
 <211> 128  
 <212> PRT  
 <213> Mus musculus

<400> 70  
 Met Cys Arg Leu Arg Val Leu Leu Leu Leu Leu Pro Leu Ala Phe Val  
 1 5 10 15

Ser Ser Ser Ala Leu Pro Ile His Asp Val Asp Ser Gln Gln Asn Thr  
 20 25 30

Ser Gly Phe Leu Gly Leu Gln Arg Leu Leu Gln Ser Phe Ser Arg Leu  
 35 40 45

Phe Leu Lys Asn Asp Leu Leu Arg Asp Leu Asp Asn Phe Phe Ser Ser  
 50 55 60

Pro Met Asp Phe Arg Asp Leu Pro Arg Asn Phe His Gln Glu Glu Asn  
 65 70 75 80

Gln Glu His Arg Met Gly Asn His Thr Leu Ser Ser His Leu Gln Ile  
 85 90 95

Asp Lys Val Thr Asp Asn Gln Thr Gly Glu Val Leu Ile Ser Glu Lys  
 100 105 110

Val Glu Ala Ser Ile Glu Pro Glu Arg Asn Pro Glu Gly Asp Trp Lys  
 115 120 125

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<210> 71  
 <211> 470  
 <212> PRT  
 <213> Rattus norvegicus

<400> 71  
 Arg Leu His Arg Arg Glu Leu Arg Pro Gly Glu Ile Pro Ala Gly Val  
 1 5 10 15  
 Ala Thr Gly Ala Leu Gly Pro Gly Gly Leu Leu Gly Thr Gly Gly Ile  
 20 25 30  
 Leu Ala Asn Glu Gly Ile Leu Ala Gly Gln Gly Gly Leu Leu Gly Gly  
 35 40 45  
 Gly Gly Leu Leu Gly Asp Gly Gly Leu Leu Gly Gly Gly Gly Val Leu  
 50 55 60  
 Gly Val Leu Gly Glu Gly Gly Ile Leu Ser Thr Val Gln Gly Ile Thr  
 65 70 75 80  
 Gly Leu Arg Ile Val Glu Leu Thr Leu Pro Arg Val Ser Val Arg Leu  
 85 90 95  
 Leu Pro Gly Val Gly Val Tyr Leu Ser Leu Tyr Thr Arg Val Ala Ile  
 100 105 110  
 Asn Gly Lys Ser Leu Ile Gly Phe Leu Asp Ile Ala Val Glu Val Asn  
 115 120 125  
 Ile Thr Ala Lys Val Arg Leu Thr Met Asp Arg Thr Gly Tyr Pro Arg  
 130 135 140  
 Leu Val Ile Glu Arg Cys Asp Thr Leu Leu Gly Gly Ile Lys Val Lys  
 145 150 155 160  
 Leu Leu Arg Gly Leu Leu Pro Asn Leu Val Asp Asn Leu Val Asn Arg  
 165 170 175  
 Val Leu Ala Asn Val Leu Pro Asp Leu Leu Cys Pro Ile Val Asp Val  
 180 185 190  
 Val Leu Gly Leu Val Asn Asp Gln Leu Gly Leu Val Asp Ser Leu Val  
 195 200 205  
 Pro Leu Gly Ile Leu Gly Ser Val Gln Tyr Thr Phe Ser Ser Leu Pro  
 210 215 220

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Leu Val Thr Gly Glu Phe Leu Glu Leu Asp Leu Asn Thr Leu Val Gly			
225	230	235	240
Glu Ala Gly Gly Asp Leu Ile Asp Tyr Pro Leu Gly Arg Pro Ala Met			
	245	250	255
Leu Pro Arg Pro Gln Met Pro Glu Leu Pro Pro Met Gly Asp Asn Thr			
	260	265	270
Asn Ser Gln Leu Ala Ile Ser Ala Asn Phe Leu Ser Ser Val Leu Thr			
	275	280	285
Met Leu Gln Lys Gln Gly Ala Leu Asp Ile Asp Ile Thr Asp Gly Met			
	290	295	300
Phe Glu Asp Leu Pro Pro Leu Thr Thr Ser Thr Leu Gly Ala Leu Ile			
305	310	315	320
Pro Lys Val Phe Gln Gln Tyr Pro Glu Ser Arg Pro Leu Thr Ile Arg			
	325	330	335
Ile Gln Val Pro Asn Pro Pro Thr Val Thr Leu Gln Lys Asp Lys Ala			
	340	345	350
Leu Val Lys Val Phe Ala Thr Ser Glu Val Val Val Ser Gln Pro Asn			
	355	360	365
Asp Val Glu Thr Thr Ile Cys Leu Ile Asp Val Asp Thr Asp Leu Leu			
	370	375	380
Ala Ser Phe Ser Val Glu Gly Asp Lys Leu Met Ile Asp Ala Lys Leu			
385	390	395	400
Asp Lys Thr Ser Leu Asn Leu Arg Thr Ser Asn Val Gly Asn Phe Asp			
	405	410	415
Val Phe Ile Leu Glu Met Leu Val Glu Lys Ile Phe Asp Leu Ala Phe			
	420	425	430
Met Pro Ala Met Asn Ala Ile Leu Gly Ser Gly Val Pro Leu Pro Lys			
	435	440	445
Ile Leu Asn Ile Asp Phe Ser Asn Ala Asp Ile Asp Val Leu Glu Asp			
	450	455	460
Leu Leu Val Leu Ser Thr			
465	470		



<210> 72  
 <211> 473  
 <212> PRT  
 <213> Rattus norvegicus

<400> 72  
 Met Met Pro Gly Val Tyr Ala Leu Leu Leu Leu Trp Gly Leu Ala Thr  
 1 5 10 15  
 Pro Cys Leu Gly Leu Leu Glu Thr Val Gly Thr Leu Ala Arg Ile Asp  
 20 25 30  
 Lys Asp Glu Leu Gly Lys Ala Ile Gln Asn Ser Leu Val Gly Gly Pro  
 35 40 45  
 Ile Leu Gln Asn Val Leu Gly Thr Val Thr Ser Val Asn Gln Gly Leu  
 50 55 60  
 Leu Gly Ala Gly Gly Leu Leu Gly Gly Gly Gly Leu Leu Ser Tyr Gly  
 65 70 75 80  
 Gly Leu Phe Ser Leu Val Glu Glu Leu Ser Gly Leu Lys Ile Glu Glu  
 85 90 95  
 Leu Thr Leu Pro Thr Val Ser Ile Lys Leu Leu Pro Gly Val Gly Val  
 100 105 110  
 Gln Leu Ser Leu His Thr Lys Val Ser Leu His Gly Ser Gly Pro Leu  
 115 120 125  
 Val Gly Leu Leu Gln Leu Ala Ala Glu Val Asn Val Ser Ser Lys Val  
 130 135 140  
 Ala Leu Gly Met Ser Pro Arg Gly Thr Pro Ile Leu Ile Leu Lys Arg  
 145 150 155 160  
 Cys Asn Thr Leu Leu Gly His Ile Ser Leu Thr Ser Gly Leu Leu Pro  
 165 170 175  
 Thr Pro Ile Phe Gly Leu Val Glu Gln Thr Leu Cys Lys Val Leu Pro  
 180 185 190  
 Gly Leu Leu Cys Pro Val Val Asp Ser Val Leu Ser Val Val Asn Glu  
 195 200 205  
 Leu Leu Gly Ala Thr Leu Ser Leu Val Pro Leu Gly Pro Leu Gly Ser

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210	215	220
Val Glu Phe Thr Leu Ala Thr Leu Pro Leu Ile Ser Asn Gln Tyr Ile		
225	230	235 240
Glu Leu Asp Ile Asn Pro Ile Val Lys Ser Ile Ala Gly Asp Val Ile		
245	250	255
Asp Phe Pro Lys Pro Arg Leu Pro Val Lys Met Pro Pro Lys Glu Asp		
260	265	270
His Thr Ser Gln Val Thr Val Pro Leu Tyr Leu Phe Asn Thr Val Phe		
275	280	285
Gly Leu Leu Gln Thr Asn Gly Ala Leu Asp Leu Asp Ile Thr Pro Glu		
290	295	300
Met Val Pro Arg Asn Ile Pro Leu Thr Thr Thr Asp Leu Ala Ala Leu		
305	310	315 320
Ala Pro Glu Ala Leu Gly Lys Leu Pro Pro Gly Gln His Leu Leu Leu		
325	330	335
Ser Leu Arg Val Met Lys Ser Pro Met Ile Leu Leu Gln Asn Lys Lys		
340	345	350
Val Thr Val Ser Ile Pro Val Thr Ile His Val Leu Ser Ser Val Pro		
355	360	365
Gln Gly Thr Pro Val Ala Leu Phe Gln Met Asn Gly Val Met Thr Leu		
370	375	380
Asn Ala His Leu Val Pro Ser Thr Thr Lys Leu His Ile Ser Leu Ser		
385	390	395 400
Leu Glu Arg Leu Thr Val Gln Leu Ala Ser Ser Phe Ser Gln Pro Phe		
405	410	415
Asp Ala Ser Arg Leu Glu Glu Trp Leu Ser Asp Val Val Arg Ala Ala		
420	425	430
Tyr Met Gln Lys Leu Asn Glu His Leu Glu Val Gly Ile Pro Leu Pro		
435	440	445
Lys Ile Leu Asn Val Asn Phe Ala Asn Ser Val Val Asp Val Ile Glu		
450	455	460
Asn Ala Val Val Leu Thr Val Ala Pro		